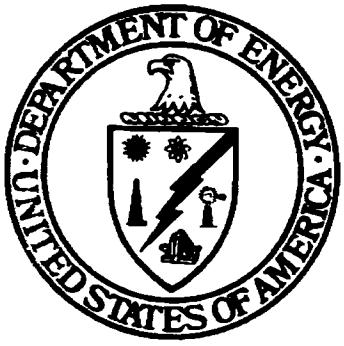
DOE/OR/21548-906
CONTRACT NO. DE-AC05-86OR21548

POST-REMEDIAL ACTION REPORT FOR THE ADMINISTRATION WORK ZONE (WP-437/RU015)

WELDON SPRING SITE REMEDIAL ACTION PROJECT
WELDON SPRING, MISSOURI

JANUARY 2002 **REV. 0**



RECORD

U.S Department of Energy
Oak Ridge Operations Office
Weldon Spring Site Remedial Action Project

Prepared by MK-Ferguson Company and Jacobs Engineering Group

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APPROVALS

Environmental Safety and Health Manager	01-29-02 Date
Data Administration Coordinator	1/29/02 Date
Engineering Manager	1-30-02 Date
Project Quality Manager	1/30/02 Date
Project Director	1/30/02 Date

DOE/OR/21548-906

Weldon Spring Site Remedial Action Project

Post-Remedial Action Report for the Administration Work Zone (WP-437/RU015)

Revision 0

January 2002

Prepared by

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U.S. DEPARTMENT OF ENERGY
Oak Ridge Operations Office
Under Contract DE-AC05-86OR21548

ABSTRACT

Work Package-437 (WP-437) has been divided into twelve work zones. This report details the confirmation field activities and analytical results for contaminated soil removal of the Administration area work zone portion. Most of this 18-acre work zone was previously confirmed between 1990 and 1992 as part of the administration building annex/composite building construction and the resurfacing of the subcontractor parking lot. The remaining portion of the work zone requiring remediation under WP437 has been subdivided into seven confirmation units (CUs).

The Administration work zone included the administration building, annex building, composite building, parking lots, decontamination pad, and a number of trailers used for offices or storage. Remediation of the area under WP437 consisted of removal of contaminated soil and underground utilities associated with the aforementioned buildings and structures.

Remediation was designed to achieve surface ALARA goals, and confirmation of soil remediation was required to meet cleanup standards as established in the *Record of Decision for Remedial Action at the Chemical Plant Area of the Weldon Spring Site*. Final confirmation data verify that the established goals and standards were achieved.

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1. INTRODUCTION

1.1 Purpose

Work Package-437 (WP-437) is divided into 12 work zones, 11 of which are identified in Figure 1-1. In addition, there is the Vicinity Property DA-6 work zone off site just west of the Ash Pond work zone. This report details the confirmation field activities and analytical results for contaminated soil removal of the Administration area work zone portion of WP-437.

Soil characterization results, pre-excavation walkovers, and historical process knowledge of the WP-437 work zones determined that the work zones contained contaminant concentrations that exceeded the As Low As Reasonably Achievable (ALARA) goals established in the *Record of Decision for Remedial Action at the Chemical Plant Area of the Weldon Spring Site* (ROD) (Ref. 1). Remediation was designed to achieve surface ALARA goals, and confirmation of soil remediation to the ROD cleanup standards was required.

The Administration work zone was subdivided into seven confirmation units (CUs) that are collectively known as remedial unit (RU) 15 and are identified in Figure 1-2. Individual CU figures are presented in Section 4 of this report.

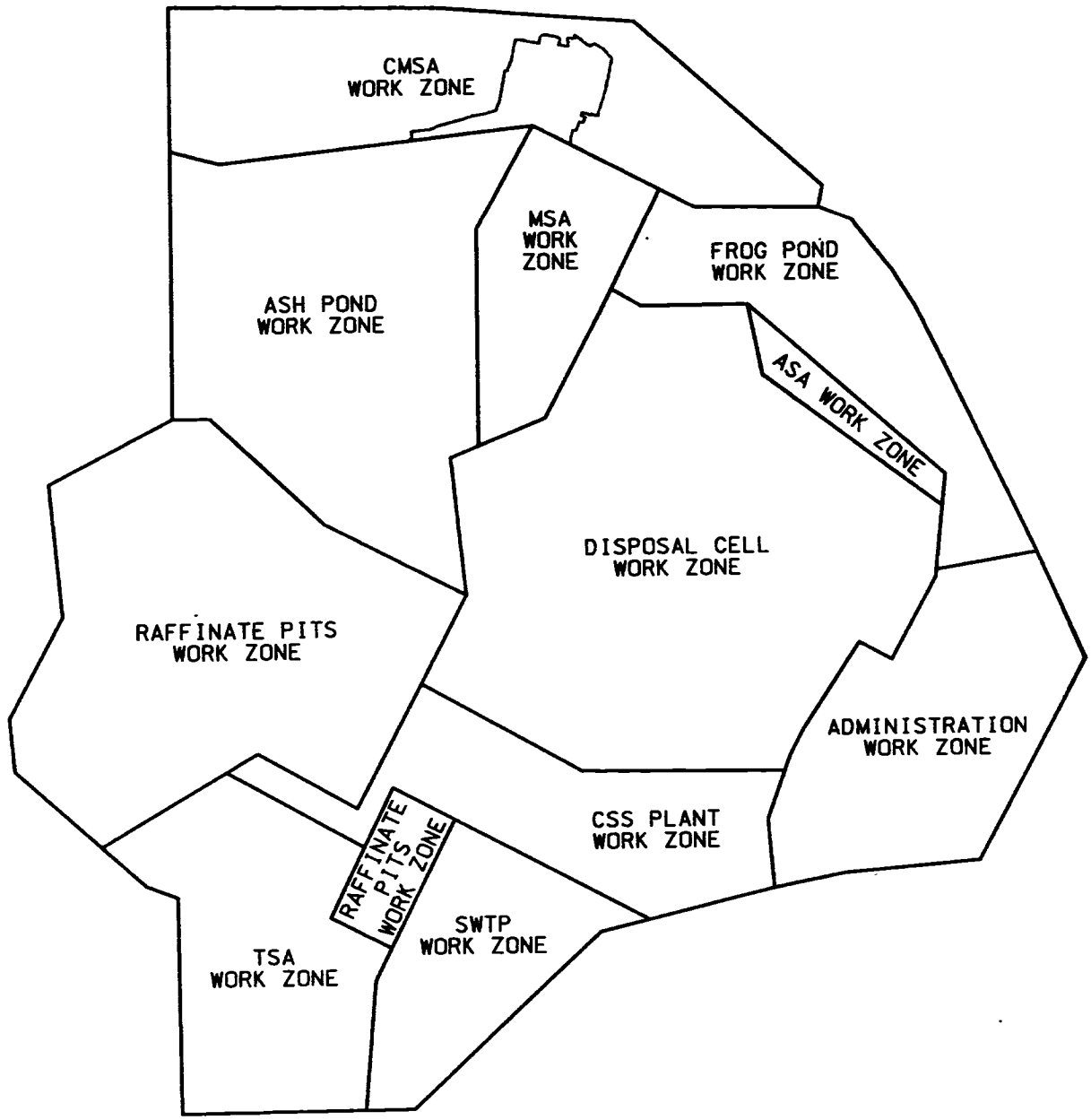
1.2 Scope

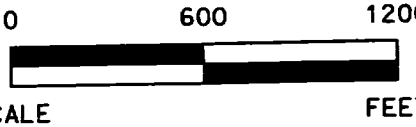
This report describes the remedial activities and confirmation surveying and sampling conducted on contaminated soils within RU015. Confirmation walkovers and soil sampling were conducted in accordance with the *Confirmation Sampling Plan Details for the Disposal Cell Facility (WP-437)* (Ref. 2). This plan was developed to ensure that the objectives identified in the *Chemical Plant Area Cleanup Attainment Confirmation Plan* (Ref. 3) were accomplished and the remediation requirements of the ROD were met.

1.3 Remediation and Confirmation Process

This report details the activities conducted to remediate the Administration portion of WP-437, which consists of CU382, CU385, CU386, CU395, CU398, CU399, and CU414. Remediation consisted of excavation of contaminated soils and underground utilities. Following remediation, walkovers were conducted where applicable, and confirmation samples were collected to ensure that all contaminated materials had been remediated.

The entire remediation process included characterization sampling, historical data review, contaminants of concern (COC) identification, confirmation plan development, contaminated soil excavation, radiological walkover surveys, confirmation soil sampling, preliminary and final data review, completion of disposition forms, quality assurance/quality control (QA/QC) review, summary of findings and conclusions, and closure report preparation.

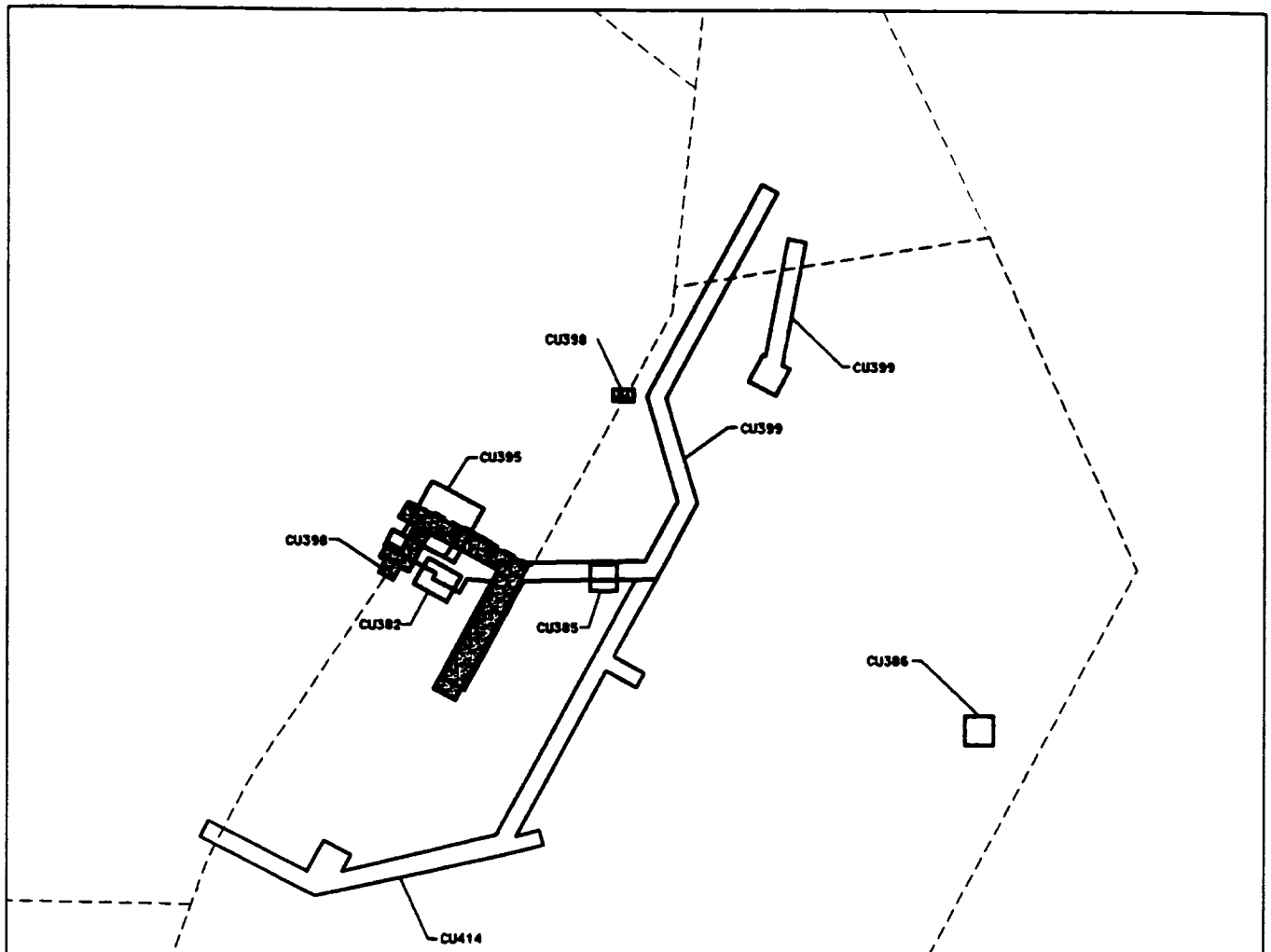




WP-437 WORK ZONE DESIGNATIONS

FIGURE 1-1

REPORT NO.:	DOE/OR/21548-906	EXHIBIT NO.:	A/CP/001/0101		
ORIGINATOR:	LB	DRAWN BY:	GLN	DATE:	5/22/01



N

0 200 400

SCALE FEET

CONFIRMATION UNITS IN REMEDIAL UNIT 15

FIGURE 1-2

REPORT NO.:	DOE/OR/21548-906	EXHIBIT NO.:	A/CP/004/0101		
ORIGINATOR:	LGE	DRAWN BY:	GLN	DATE:	12/5/01

2. PRE-REMEDIATION ACTIVITIES

2.1 Determining Contaminants of Concern

Contaminants of concern (COCs) determination was dependant upon historical information, characterization results, and visual observation during field activities, and not all COCs were required for all sample locations. The full process for identifying COCs is detailed in the *Confirmation Sampling Plan Details for the Disposal Cell Facility (WP-437)* (Ref. 2). This plan identified COCs for RU015 as arsenic (As), chromium (Cr), lead (Pb), thallium (Tl), polynuclear aromatic hydrocarbon (PAH), polychlorinated biphenyl (PCB), Radium-226 (Ra-226), Radium-228 (Ra-228), Thorium-230 (Th-230), Thorium-232 (Th-232), and Uranium-238 (U-238).

Confirmation units (CUs) in the Administration work zone included two in-situ contaminated soil areas and two areas which were sites of known contaminated structures. Additionally, two underground utility lines were located in this work zone. One was a storm water sewer line with eleven accessible manholes and the other was a gray water line system. COCs for the two utility lines originally included the entire suite of COCs listed above, since no waste management sump data or other negative documentation was available that would narrow the list of COCs. Available information indicated that the utility lines were comprised of concrete, and both underwent further characterization as described in the *Characterization Sampling Plan for the Administration Area Storm Water Sewers* (Ref. 4) and the *Characterization Plan for the Gray Water Line* (Ref. 5).

Results of the characterization efforts can be found in the *Characterization Results for the Administration Area Storm Water Sewers* (Ref. 6) and the *Characterization Results for the Gray Water Line* (Ref. 7). Based on these results and a November 10, 1999 As Low As Reasonably Achievable (ALARA) Committee decision, CU boundaries in this work zone were redefined and COCs were adjusted accordingly. Additional details can be found in Interoffice Correspondence dated February 8 and February 29, 2000, which are presented in Appendix D of this report. It was also decided that the manholes associated with the storm water sewer line would be removed and the soil beneath each would be sampled. If the sample results were below ALARA goals, the utility line would be grouted and remain in place.

Upon removal of the manholes, however, it was realized that the utility lines were comprised entirely of corrugated metal pipe with the exception of the easternmost segment of CU399. An ALARA Committee meeting was held on May 5, 2000 to discuss this finding along with the characterization results, and it was agreed that the storm water sewer line must be removed as contaminated. CU boundaries encompassing the utility were again revised, and COCs were adjusted accordingly. Figure 1-2 shows the final CU configuration and resulting COCs can be found in the Summary Forms in Section 4 of this report.

2.2 Data Quality Objectives

Data Quality Objectives (DQOs) were identified to specify quality data and ensure that the data would be sufficient to support the decision making process throughout remedial activities, including the confirmation process. Confirmation DQOs were developed for sampling and analyzing soils during remediation and for the subsequent data evaluation. The DQOs were designed to make statistically defensible decisions regarding attainment of cleanup standards. Sampling and analytical programs for the WP-437 work zones were designed in accordance with DQOs stated in the *Chemical Plant Area Cleanup Attainment Confirmation Plan* (Ref. 3).

2.3 Cleanup Standards

The objective of the Department of Energy (DOE) ALARA process is to reduce exposures and risks associated with residual contamination. The ROD (Ref. 1) established two different sets of cleanup standards: risk-based cleanup criteria and As Low As Reasonably Achievable (ALARA) goals. Remedial activities for WP-437 were designed to remove soil where the COC concentrations were found by characterization or during remediation activities to exceed ALARA goals. Table 2-1 summarizes the cleanup criteria and ALARA goals established in the ROD that are applicable for COCs in the Ash Pond work zone. Throughout the remedial activities at RU015, COC concentrations were evaluated with the ALARA process.

2.4 Cleanup Confirmation Process

The cleanup confirmation process is used to determine, under the remedial guidelines, if remediation activities have achieved the cleanup standards. Figure 2-1 shows the cleanup confirmation process for remedial activities conducted at the WP-437 area.

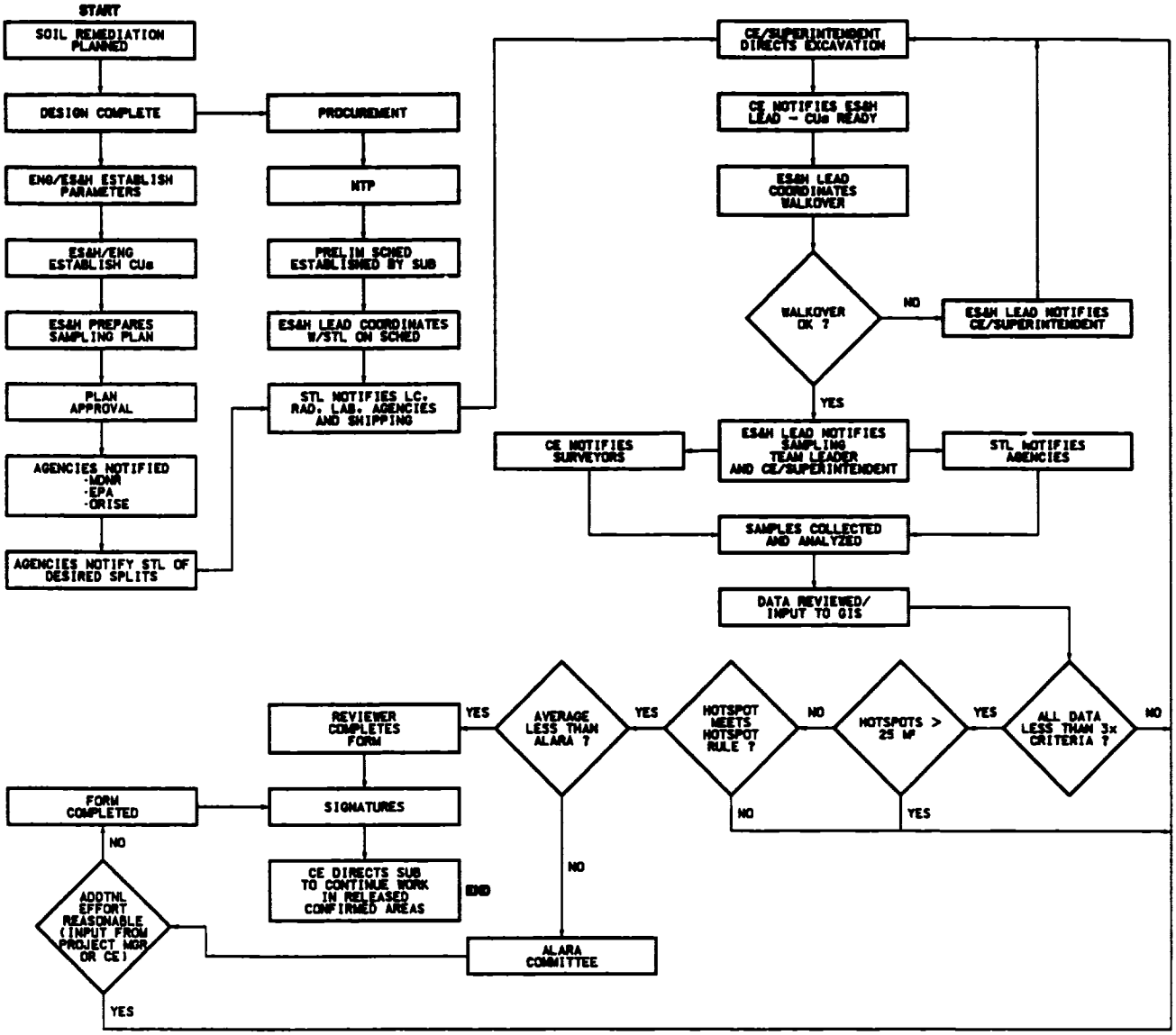
The decision-making process specifies how the data will be applied and evaluated within the cleanup confirmation process. The decision-making process includes provisions for any hot spots that may be encountered by applying a formula to determine the acceptable concentration for the COC.

Table 2-1 ROD Cleanup Standards for COCs within the WP-437 Administration Work Zone

	SURFACE [a]		SUBSURFACE [b]	
RADIONUCLIDE (pCi/g)	**ALARA**	**CRITERIA**	**ALARA**	**CRITERIA**
Ra-226	5.0	6.2	5.0	16.2
Ra-228	5.0	6.2	5.0	16.2
Total Radium	5.0	6.2	5.0	16.2
Th-230	5.0	6.2	5.0	16.2
Th-232	5.0	6.2	5.0	16.2
U-238	30.0	120	30.0	120.0
CHEMICAL (mg/kg)				
Arsenic	45	75	75	750
Chromium	90	100	100	1000
Lead	240	450	450	4500
Thallium	16	20	20	200
PAH	0.44	5.6	5.6	26
PCB	0.65	8	8	80

(a) Values listed for surface soils apply to contamination within the upper 15 cm (6 in.) of the soil column.
(b) Values for subsurface apply to contamination in soils below 15 cm (6 in.).

Source: *Record of Decision for Remedial Action at the Chemical Plant Area of the Weldon Spring Site* (Ref. 1)



CLEANUP CONFIRMATION PROCESS

FIGURE 2-1

REPORT NO.:	DOE/OR/21548-906	EXHIBIT NO.:	A/PI/031/0601		
ORIGINATOR:	ML	DRAWN BY:	GLN	DATE:	12/4/01

3. REMEDIAL ACTIVITIES

3.1 Field Activities

Contaminated soils and structures were removed from the Administration work zone and areas were excavated to design depths as detailed in the Administration work zone specifications (Ref. 8), where applicable. After the initial excavation was complete, radiological walkover surveys were conducted to evaluate the need for additional excavation. When the surveys indicated no additional excavation was needed, confirmation soil samples were collected.

Confirmation results were then reviewed, and additional excavation and confirmation sampling was conducted in hot spot areas, if necessary. After achieving cleanup standards, a disposition form was completed with preliminary analytical results. The form was reviewed and signed by authorized project personnel. The confirmation unit (CU) was then released back to the subcontractor for final grading.

Field activities completed during remediation, such as walkover surveys and soil sampling, were conducted in accordance with procedures specified in the *Confirmation Sampling Plan Details for the Disposal Cell Facility (WP-437)* (Ref. 2). Field activities were conducted to achieve and document sampling objectives specified in the *Chemical Plant Area Cleanup Attainment Confirmation Plan* (Ref. 3). All sampling and remedial action surveys were conducted and documented in accordance with Weldon Spring Site Remedial Action Project (WSSRAP) Environmental Safety and Health (ES&H) procedures.

3.1.1 Walkover Surveys

For contaminated soil excavations in the Administration work zone, radiological walkover surveys were conducted after contaminated soil removal was completed to determine if confirmation sample collection could begin. The surveys were conducted using a 2 in. x 2 in. sodium iodide (NaI) scintillation detector. The survey readings were within an acceptable range (less than 1.5 times background) for all applicable CUs in this work zone. Background ranges for each of these CUs are listed in the CU Summary Forms in Section 4 of this report. Copies of Walkover Forms are presented in Appendix A.

It was determined that only fixed, internal contamination existed inside the storm sewer utility lines; therefore, any contamination was removed at the same time the utility line was removed. Radiological walkover surveys were not conducted at the bottom of the very deep excavations that were necessary for utility line removal, and the areas were determined to be ready for confirmation sampling upon removal of the utility lines.

3.1.2 Soil Sampling

Once the walkovers were completed, or it was determined that confirmation sample collection could begin, soil sampling was conducted as part of the confirmation process. The sampling locations for CUs in RU015 are shown in the figures in Section 4. Analytical suites for the CUs were dependant upon the COC list developed from historical information, characterization data, and visual identification in the field as discussed in Section 2.

In the CUs requiring utility line removal, once the utility line was extracted, soil from beneath the line was removed from the excavation and staged along side the open excavation. Confirmation samples were collected from the staged soil, and survey coordinates were used to capture the actual sample locations where the soil was collected from within the trenches. This approach eliminated the need for personnel to enter the trenches thereby avoiding an unsafe condition while achieving representative sample information.

The subsequent survey and confirmation sample results indicated that contaminants were below the applicable cleanup standards, and the averages were less than the applicable ALARA goals; therefore, no further remediation was conducted for RU015. Disposition forms were completed following the receipt of preliminary analytical data for all CUs within the Administration work zone.

3.2 Laboratory Activities

Radiological analyses for RU015 were conducted at on-site and off-site laboratories in accordance with the *Project Management Contractor Quality Assurance Program* (Ref. 9) and the *Environmental Quality Assurance Project Plan* (EQAPjP) (Ref. 10). CU releases were based on estimated Ra-226 results. In addition, the concentration of Th-232 was calculated based on the analytical results of Ra-228, and the calculated value was used for CU releases. Both of these calculations are explained in detail in interoffice correspondences (IOCs) in Appendix D. Chemical analyses for RU015 were conducted at subcontracted off-site laboratories using Contract Laboratory Program (CLP) methodologies.

Summaries of the analytical results for each CU can be found in Section 4 of this report. Analytical data were subject to verification, review, and validation upon receipt from the laboratory, as detailed in Section 5 of this report.

3.3 Independent Verification Activities

The Oak Ridge Institute for Science and Education (ORISE) was contracted by the U. S. Department of Energy (DOE) to verify confirmation soil sampling in the chemical plant area. Verification activities included independent walkover radiological surveys and collection and analysis of soil samples to verify proper disposition of CUs. Field verification activities were conducted in accordance with ORISE's final survey plan (Ref. 11).

A final verification report will be prepared by ORISE. The ORISE report will contain verification of walkover surveys and soil sampling results and will affirm that the remedial action objectives were achieved. ORISE visits to the Weldon Spring site to verify WP-437 work zones did not include a visit to the Administration work zone.

4. CONFIRMATION UNITS RESULTS SUMMARY

This section summarizes the confirmation unit (CU) analytical results for the seven CUs in RU015. In total, 98 locations were sampled between 2/08/00 and 2/23/01. Preliminary results were below cleanup criteria. Average contaminant of concern (COC) concentrations as indicated by preliminary data remained below ALARA goals. All 100 m^2 averages from final data are less than criteria.

After the preliminary data were reviewed, disposition forms were completed and signed by authorized reviewers. Based on the preliminary confirmation data, all seven CUs in RU015 were fully released as complying with surface cleanup standards.

Note that the preliminary data were the initial results available immediately from the laboratory and were used for releases. These preliminary results could vary from the final results based upon laboratory quality checks or Weldon Spring Site Remedial Action Project (WSSRAP) verification activities. Upon receipt of the data packages, the final data were reviewed and compared to the preliminary data. The final analytical results agreed with or were lower than the preliminary results and indicated that the remedial activities were completed. The final results meet the cleanup standards as detailed in the *Chemical Plant Area Cleanup Area Attainment Confirmation Plan* (Ref. 3) for all CUs in RU015.

Tables 4-1 through 4-7 and associated figures provide the confirmation details for each CU, and all data presented is final data. Copies of the walkover survey information for each CU are presented in Appendix A. The final data are presented in Appendix B. A list of sample location coordinates is presented in Appendix C.

On the following tables in this section, the "Date Released For Unrestricted Use" refers to the date that confirmation activities were completed and the CU was released to the subcontractor to begin final backfilling and/or regrading. The phrase is not synonymous with DOE Order 5400.5 terminology that refers to release without radiological restrictions.

Table 4 - 1 Summary of CU382

CU: 382 RU: 15

COC				
	Ra-226	X	As	X
	Ra-228	X	Cr	X
	Th-230	X	Pb	X
	Th-232	X	Tl	X
	U-238	X	PAH	X
			PCB	X
Reference Figure:	4 - 1		TNT	

DATE RELEASED FOR UNRESTRICTED USE: 2 / 16 / 00

CLEANUP STANDARD [X] SURFACE [ ] SUBSURFACE

EACH 100m² < CRITERIA? [X] YES [ ] NO

LOCATION DESCRIPTION *This CU encompasses the decontamination pad that was located behind access control.*

WALKOVER SURVEY INFORMATION

BACKGROUND *N/A* cpm (shielding may have been used on a case-by-case basis)

FINAL SURVEY(S) BELOW 1.5 X BACKGROUND ? [ ] YES [X] NONE

DATE(S) SCANNED: *(See Section 3.1.1)* CONDUCTED

CONFIRMATION SAMPLING INFORMATION

TOTAL # OF SAMPLE LOCATIONS : 1

TOTAL # OF UTILITY SAMPLES : 1

AVERAGES < ALARA? [X] YES [ ] NO

HOTSPOTS REMAINING? [ ] YES [X] NO

ADDITIONAL EXCAVATION REQUIRED? [ ] YES [X] NO

GENERAL COMMENTS - *This CU was revised. See Section 2.1 for details. All final results are below ALARA.*

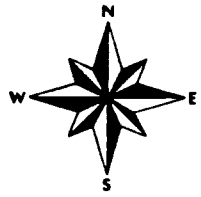
ORISE ACTION - *None*

ALARA COMMITTEE ACTION - *See Section 2.1.*

CU SUMMARY DATA

As	1	7.4	N/A	45	75	0	0
Cr	1	20.1	N/A	90	110	0	0
Pb	1	9.4	N/A	240	450	0	0
Tl	1	0.13	N/A	16	20	0	0
Ra-226	1	0.81	N/A	5	6.2	0	0
Ra-228	1	1.03	N/A	5	6.2	0	0
Total Radium	1	1.84	N/A	5	6.2	0	0
Th-230	1	1.00	N/A	5	6.2	0	0
Th-232	1	1.06	N/A	5	6.2	0	0
U-238	1	1.16	N/A	30	120	0	0
PAH	1	0.05	N/A	0.44	5.6	0	0
PCB	1	0.09	N/A	0.65	8	0	0

NOTE: Radiological contaminants are listed in pCi/g. Chemical contaminants are listed in mg/kg.



SC-38201-U

150 75 0 150 FEET

50 25 0 50 METERS

Sample Locations in Remedial Unit RU015
Confirmation Unit CU382

Figure: 4-1

REPORT NO.:	DOE/OR/21548-906	EXHIBIT NO.:			
ORIGINATOR:	MGL	DRAWN BY:	LGB	DATE:	10/22/01

Table 4 - 2 Summary of CU385

CU: 385 RU: 15

COC: Ra-226 [ ], Ra-228 [ ], Th-230 [ ], Th-232 [ ], U-238 [ ], As [ ], Cr [ ], Pb [ ], Tl [X], PAH [ ], PCB [ ], TNT [ ]

Reference Figure: 4 - 2

DATE RELEASED FOR UNRESTRICTED USE: 2 / 15 / 00

CLEANUP STANDARD [X] SURFACE [ ] SUBSURFACE

EACH 100m² < CRITERIA? [X] YES [ ] NO

LOCATION DESCRIPTION: *This CU is located approximately 150 feet east of the decontamination pad that was located behind access control.*

WALKOVER SURVEY INFORMATION

BACKGROUND: *4,500* cpm (shielding may have been used on a case-by-case basis)

FINAL SURVEY(S) BELOW 1.5 X BACKGROUND ? [X] YES [ ] NO

DATE(S) SCANNED: *2/7/00*

CONFIRMATION SAMPLING INFORMATION

TOTAL # OF SAMPLE LOCATIONS : 2

TOTAL # OF UTILITY SAMPLES : 0

AVERAGES < ALARA? [X] YES [ ] NO

HOTSPOTS REMAINING? [ ] YES [X] NO

ADDITIONAL EXCAVATION REQUIRED? [ ] YES [X] NO

GENERAL COMMENTS - *This CU represents in-situ excavation ADMX-1. The CU boundary was revised. See Section 2.1 for details. Sample locations have been offset from the original grid in order to best represent the excavation. All final results are below ALARA*

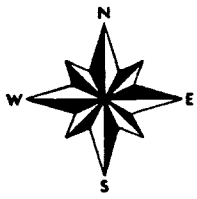
ORISE ACTION - *None*

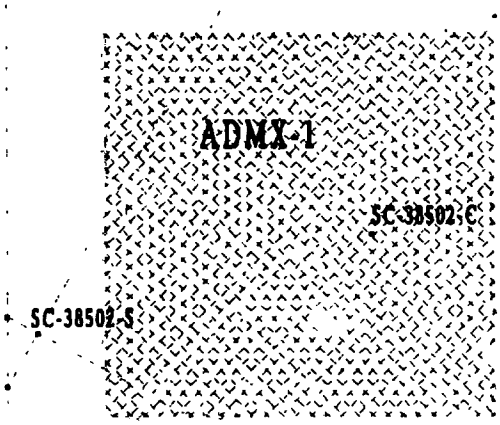
ALARA COMMITTEE ACTION - *See Section 2.1.*

CU SUMMARY DATA

Tl	2	0.40 - 1.50	0.95	16	20	0	0

NOTE: Chemical contaminants are listed in mg/kg.





150 75 0 150 FEET

50 25 0 50 METERS

Sample Locations in Remedial Unit RU015
Confirmation Unit CU385

Figure: 4-2

REPORT NO.:	DOE/OR/21548-906	EXHIBIT NO.:			
ORIGINATOR:	MGL	DRAWN BY:	LGB	DATE:	10/22/01

Table 4 - 3 Summary of CU386

CU: 386 RU: 15

COC: Ra-226 [ ], Ra-228 [ ], Th-230 [ ], Th-232 [ ], U-238 [ ]; As [X], Cr [ ], Pb [ ], Tl [ ], PAH [ ], PCB [ ], TNT [ ]

Reference Figure: 4 - 3

DATE RELEASED FOR UNRESTRICTED USE: 2 / 11 / 00

CLEANUP STANDARD [X] SURFACE [ ] SUBSURFACE

EACH 100m² < CRITERIA? [X] YES [ ] NO

LOCATION DESCRIPTION: *This CU is located south of the guard shack near the main gate.*

WALKOVER SURVEY INFORMATION

BACKGROUND: *4,500* cpm (shielding may have been used on a case-by-case basis)

FINAL SURVEY(S) BELOW 1.5 X BACKGROUND ? [X] YES [ ] NO

DATE(S) SCANNED: *2/8/00*

CONFIRMATION SAMPLING INFORMATION

TOTAL # OF SAMPLE LOCATIONS : 2

TOTAL # OF UTILITY SAMPLES : 0

AVERAGES < ALARA? [X] YES [ ] NO

HOTSPOTS REMAINING? [ ] YES [X] NO

ADDITIONAL EXCAVATION REQUIRED? [ ] YES [X] NO

GENERAL COMMENTS - *This CU represents in-situ excavation ADMX-2. The CU boundary was revised. See Section 2.1 for details. Sample locations have been offset from the original grid in order to best represent the excavation. All final results are below ALARA.*

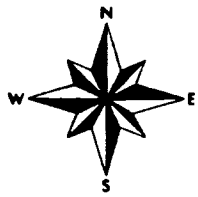
ORISE ACTION - *None*

ALARA COMMITTEE ACTION - *See Section 2.1.*

CU SUMMARY DATA

As	2	4.6 - 4.7	4.65	30	120	0	0

NOTE: Chemical contaminants are listed in mg/kg.



160 75 0 150 FEET

50 25 0 50 METERS

Sample Locations in Remedial Unit RU015
Confirmation Unit CU386

Figure: 4-3

REPORT NO.:	DOE/OR/21548-906	EXHIBIT NO.:			
ORIGINATOR:	MGL	DRAWN BY:	LGB	DATE	10/22/01

Table 4 - 4 Summary of CU395

CU: 395 RU: 15

COC				
	Ra-226	X	As	X
	Ra-228	X	Cr	X
	Th-230	X	Pb	X
	Th-232	X	Tl	X
	U-238	X	PAH	
			PCB	X
Reference Figure: 4 - 4			TNT	

DATE RELEASED FOR UNRESTRICTED USE: 3 / 6 / 00

CLEANUP STANDARD [X] SURFACE [ ] SUBSURFACE

EACH 100m² < CRITERIA? [X] YES [ ] NO

LOCATION DESCRIPTION: *This CU is located northwest of access control at the site of a former air shaft.*

WALKOVER SURVEY INFORMATION

BACKGROUND: *4,000* cpm (shielding may have been used on a case-by-case basis)

FINAL SURVEY(S) BELOW 1.5 X BACKGROUND ? [X] YES [ ] NO

DATE(S) SCANNED: *2/28/00*

CONFIRMATION SAMPLING INFORMATION

TOTAL # OF SAMPLE LOCATIONS : 8

TOTAL # OF UTILITY SAMPLES : 0

AVERAGES < ALARA? [X] YES [ ] NO

HOTSPOTS REMAINING? [ ] YES [X] NO

ADDITIONAL EXCAVATION REQUIRED? [ ] YES [X] NO

GENERAL COMMENTS - *This CU number was not identified in the the original sampling plan. It was added after further characterization took place in this work zone. See Section 2.1 for details. All final results are below ALARA.*

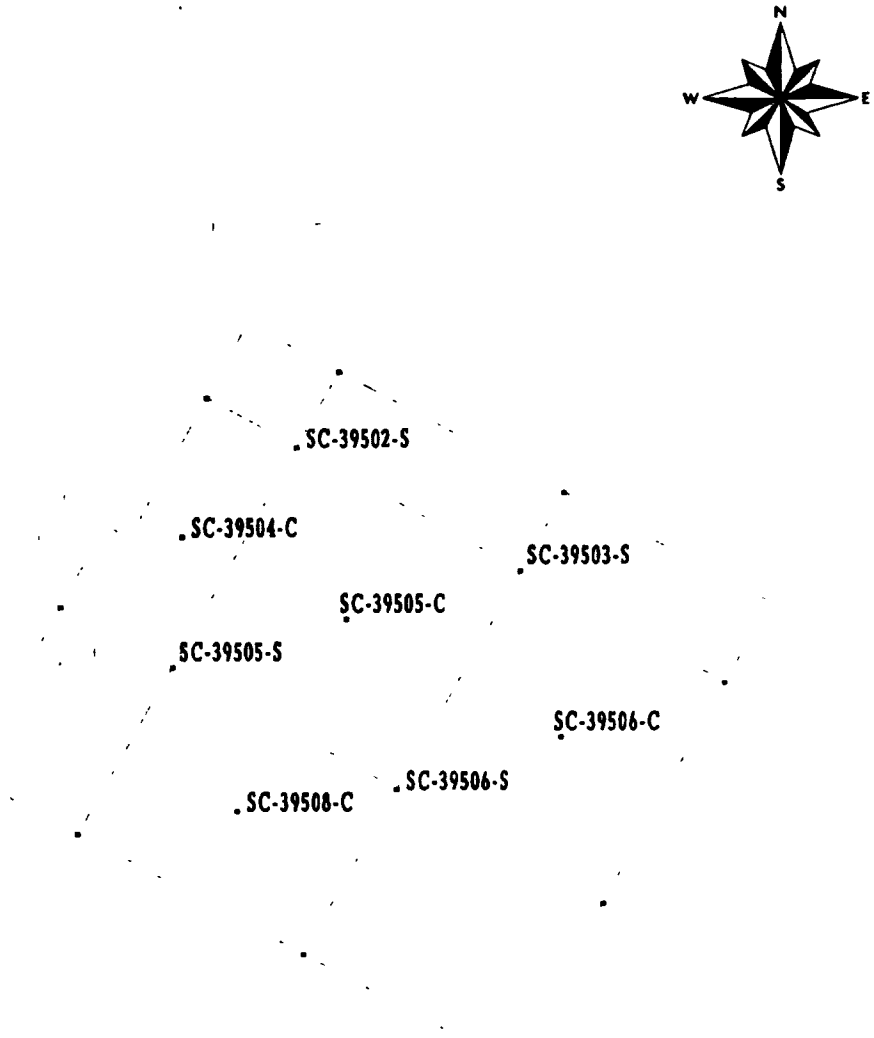
ORISE ACTION - *None*

ALARA COMMITTEE ACTION - *See Section 2.1.*

CU SUMMARY DATA

As	8	1.4 - 10.8	6.5	45	75	0	0
Cr	8	8.4 - 23.3	17.88	90	110	0	0
Pb	8	8 - 16.9	12.79	240	450	0	0
Tl	8	0.18 - 1.9	1.12	16	20	0	0
Ra-226	8	0.65 - 0.94	0.74	5	6.2	0	0
Ra-228	8	0.39 - 1.19	0.91	5	6.2	0	0
Total Radium	8	1.08 - 1.87	1.65	5	6.2	0	0
Th-230	8	0.9 - 1.39	1.19	5	6.2	0	0
Th-232	8	0.40 - 1.22	0.94	5	6.2	0	0
U-238	8	1.05 - 1.22	1.12	30	120	0	0
PAH	8	0.06 - 0.065	0.06	0.65	8	0	0

NOTE: Radiological contaminants are listed in pCi/g. Chemical contaminants are listed in mg/kg.



150 75 0 150 FEET

50 25 0 50 METERS

Sample Locations in Remedial Unit RU015
Confirmation Unit CU395

Figure: 4-4

REPORT NO.:	DOE/OR/21548-906	EXHIBIT NO.:			
ORIGINATOR:	MGL	DRAWN BY:	LGB	DATE:	10/22/01

Table 4 - 5 Summary of CU398

CU: 398 RU: 15

COC				
	Ra-226	X	As	
	Ra-228	X	Cr	
	Th-230	X	Pb	
	Th-232	X	Tl	
	U-238	X	PAH	
			PCB	
Reference Figure:	4 - 5		TNT	

DATE RELEASED FOR UNRESTRICTED USE: 9 / 13 / 00

CLEANUP STANDARD [X] SURFACE [ ] SUBSURFACE

EACH 100m² < CRITERIA? [X] YES [ ] NO

LOCATION DESCRIPTION: *This CU is located at the site of a former process line behind access control and includes a former utility line west of the shower city area.*

WALKOVER SURVEY INFORMATION

BACKGROUND: *N/A* cpm (shielding may have been used on a case-by-case basis)

FINAL SURVEY(S) BELOW 1.5 X BACKGROUND ? [ ] YES [X] NONE

DATE(S) SCANNED: *(See Section 3.1.1)* CONDUCTED

CONFIRMATION SAMPLING INFORMATION

TOTAL # OF SAMPLE LOCATIONS : 13

TOTAL # OF UTILITY SAMPLES : 13

AVERAGES < ALARA? [X] YES [ ] NO

HOTSPOTS REMAINING? [ ] YES [X] NO

ADDITIONAL EXCAVATION REQUIRED? [ ] YES [X] NO

GENERAL COMMENTS - *This CU number was not identified in the the original sampling plan. It was added after further characterization took place in this work zone. See Section 2.1 for details. All final results are below ALARA.*

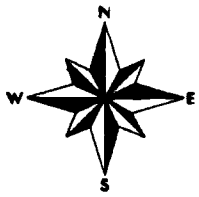
ORISE ACTION - *None*

ALARA COMMITTEE ACTION - *See Section 2.1.*

CU SUMMARY DATA

Ra-226	13	0.60 -0.98	0.82	5	6.2	0	0
Ra-228	13	0.41 - 1.11	0.95	5	6.2	0	0
Total Radium	13	1.17 - 2.03	1.77	5	6.2	0	0
Th-230	13	0.76 - 1.57	1.14	5	6.2	0	0
Th-232	13	0.42 - 1.14	0.98	5	6.2	0	0
U-238	13	1.05 - 1.34	1.13	30	120	0	0

NOTE: Radiological contaminants are listed in pCi/g.



SC-39813-U

SC-39812-U

SC-39808-U

SC-39807-U

SC-39811-U

SC-39806-U

SC-39810-U

SC-39805-U

SC-39809-U

SC-39804-U

SC-39803-U

SC-39802-U

SC-39801-U

150 75 0 150 FEET

50 25 0 50 METERS

Sample Locations in Remedial Unit RU015
Confirmation Unit CU398

Figure: 4-5

REPORT NO.:	DOE/OR/21548-906	EXHIBIT NO :			
ORIGINATOR:	MGL	DRAWN BY:	LGE	DATE:	12/11/01

Table 4 - 6 Summary of CU399

CU: 399 RU: 15

COC: Ra-226 [X], Ra-228 [X], Th-230 [X], Th-232 [X], U-238 [X]; As [ ], Cr [ ], Pb [ ], Tl [ ], PAH [ ], PCB [ ], TNT [ ]

Reference Figure: 4 - 6

DATE RELEASED FOR UNRESTRICTED USE: 8 / 30 / 00

CLEANUP STANDARD [X] SURFACE [ ] SUBSURFACE

EACH 100m² < CRITERIA? [X] YES [ ] NO

LOCATION DESCRIPTION: *This CU is located at the site of a former process line behind access control.*

WALKOVER SURVEY INFORMATION

BACKGROUND: *N/A* cpm (shielding may have been used on a case-by-case basis)

FINAL SURVEY(S) BELOW 1.5 X BACKGROUND ? [ ] YES [X] NONE

DATE(S) SCANNED: *(See Section 3.1.1)* CONDUCTED

CONFIRMATION SAMPLING INFORMATION

TOTAL # OF SAMPLE LOCATIONS: 44

TOTAL # OF UTILITY SAMPLES: 44

AVERAGES < ALARA? [X] YES [ ] NO

HOTSPOTS REMAINING? [ ] YES [X] NO

ADDITIONAL EXCAVATION REQUIRED? [ ] YES [X] NO

GENERAL COMMENTS - *Two samples were collected in this CU upon removal of Manholes #10 and #12. At that time, the manholes were were the only part of the existing process line that was to be removed. The samples were inadvertantly interchanged with two samples from the Sedimentation Basin in the CMSA work zone causing indeterminate results for all four samples. It was decided that the entire process line was to be removed instead of only the manholes, so the two locations were not resampled. Instead, the entire trench was sampled using the approach for utility samples described in the sampling plan. The original manhole samples were not used in the statistical summaries for this CU. This CU number was not identified in the original sampling plan. See Section 2.1 for details. All final results are below ALARA.*

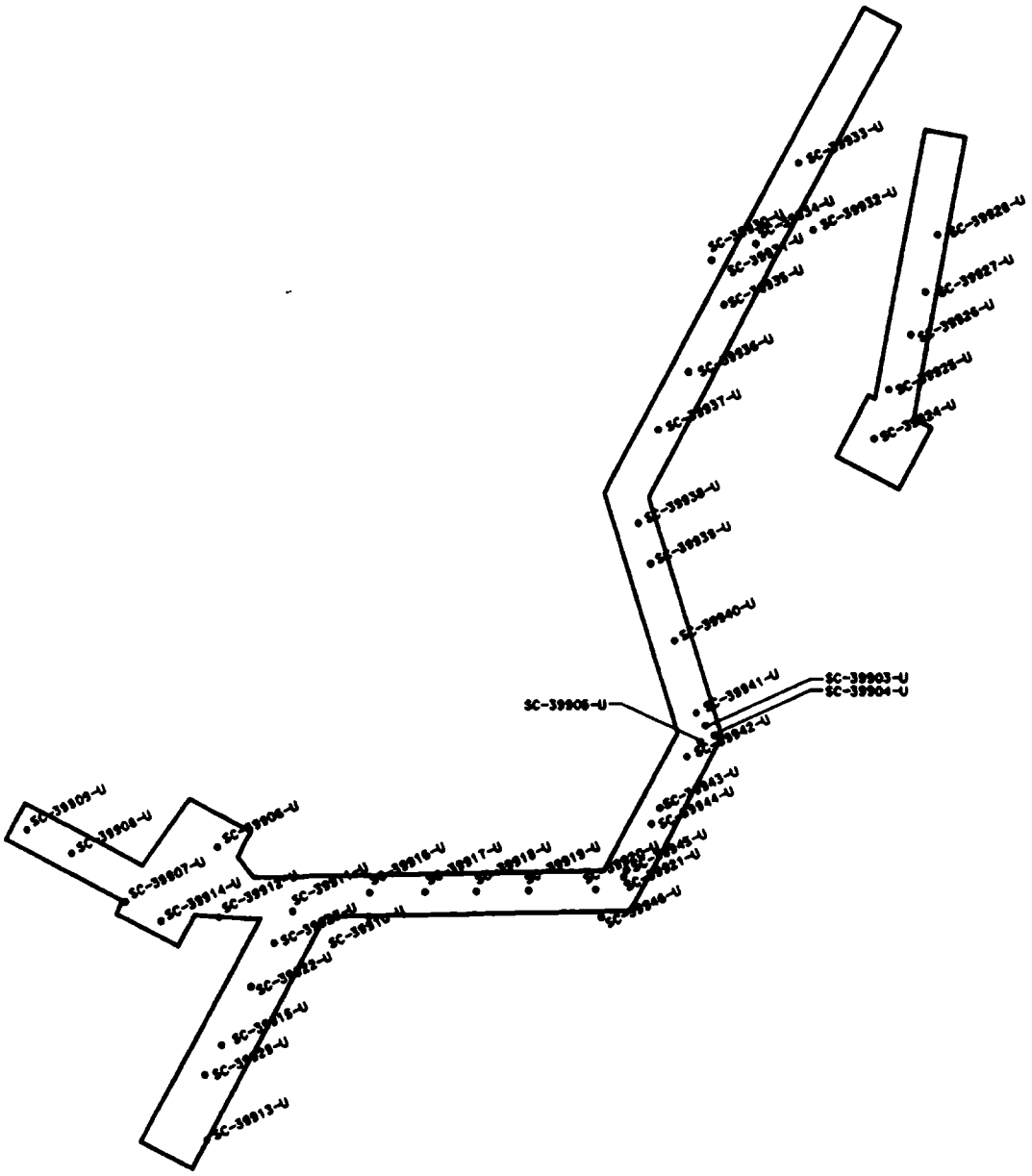
ORISE ACTION - *None*

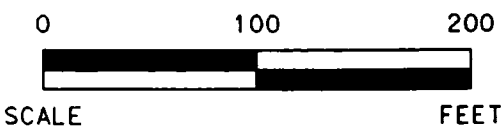
ALARA COMMITTEE ACTION - *See Section 2.1*

CU SUMMARY DATA

Ra-226	44	0.24 - 1.25	0.79	5	6.2	0	0
Ra-228	44	0.30 - 1.40	0.92	5	6.2	0	0
Total Radium	44	0.58 - 2.44	1.71	5	6.2	0	0
Th-230	44	0.80 - 1.74	1.16	5	6.2	0	0
Th-232	44	0.30 - 1.44	0.94	5	6.2	0	0
U-238	44	0.86 - 4.59	1.29	30	120	0	0

NOTE: Radiological contaminants are listed in pCi/g.





Sample Locations in Remedial Unit RU015 Confirmation Unit CU399

FIGURE 4-6

REPORT NO.:	DOE/OR/21548-906	EXHIBIT NO.:			
ORIGINATOR:	LGE	DRAWN BY:	LGE	DATE:	12/5/01

Table 4 - 7 Summary of CU414

CU: 414 RU: 15

COC				
	Ra-226	X	As	
	Ra-228	X	Cr	
	Th-230	X	Pb	
	Th-232	X	Tl	
	U-238	X	PAH	
			PCB	
Reference Figure:	4 - 7		TNT	

DATE RELEASED FOR UNRESTRICTED USE: 3 / 5 / 01

CLEANUP STANDARD [X] SURFACE [ ] SUBSURFACE

EACH 100m² < CRITERIA? [X] YES [ ] NO

LOCATION DESCRIPTION: *This CU is located at the site of the process line that was located along the front and the south side of the modular building.*

WALKOVER SURVEY INFORMATION

BACKGROUND: *N/A* cpm (shielding may have been used on a case-by-case basis)

FINAL SURVEY(S) BELOW 1.5 X BACKGROUND ? [ ] YES [X] NONE CONDUCTED

DATE(S) SCANNED: *(See Section 3.1.1)*

CONFIRMATION SAMPLING INFORMATION

TOTAL # OF SAMPLE LOCATIONS : 28

TOTAL # OF UTILITY SAMPLES : 28

AVERAGES < ALARA? [X] YES [ ] NO

HOTSPOTS REMAINING? [ ] YES [X] NO

ADDITIONAL EXCAVATION REQUIRED? [ ] YES [X] NO

GENERAL COMMENTS - *This CU number was not identified in the the original sampling plan. It was added after further characterization took place in this work zone. See Section 2.1 for details. All final results are below ALARA.*

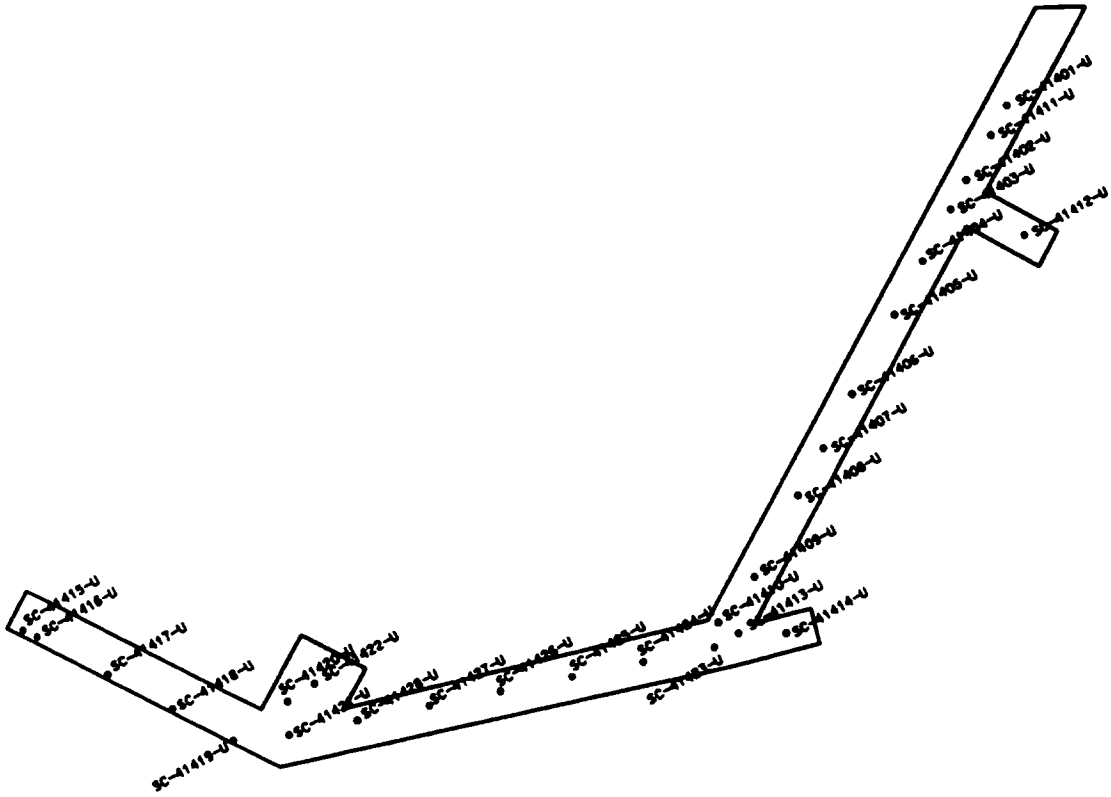
ORISE ACTION - *None*

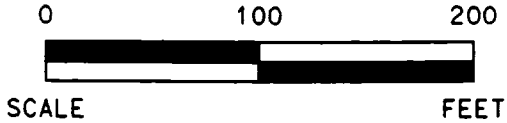
ALARA COMMITTEE ACTION - *See Section 2.1.*

CU SUMMARY DATA

Ra-226	28	0.61 - 0.97	0.79	5	6.2	0	0
Ra-228	28	0.40 - 1.34	1.03	5	6.2	0	0
Total Radium	28	1.15 - 2.25	1.82	5	6.2	0	0
Th-230	28	0.82 - 1.58	1.18	5	6.2	0	0
Th-232	28	0.41 - 1.37	1.05	5	6.02	0	0
U-238	28	1.05 - 5.35	1.4	30	120	0	0

NOTE: Radiological contaminants are listed in pCi/g.





Sample Locations in Remedial Unit RU015 Confirmation Unit 414

FIGURE 4-7

REPORT NO.:	DOE/OR/21548-906	EXHIBIT NO.:			
ORIGINATOR:	LGE	DRAWN BY:	LGE	DATE:	12/11/01

5. DATA EVALUATION

Work Package-437 (WP-437) final analytical data were evaluated to determine whether data quality objectives developed for the Weldon Spring Site Remedial Action Project (WSSRAP) were met and to ensure that overall data quality results were generated from these remedial activities. The data were evaluated in accordance with the *Project Management Contractor Quality Assurance Program* (Ref. 9) and the *Environmental Quality Assurance Project Plan* (Ref. 10). The data evaluation process was completed by data verification, data review, data validation, and data management activities as stated in the *Chemical Plant Area Cleanup Area Attainment Confirmation Plan* (Ref. 3).

5.1 Data Verification

Data verification was conducted in accordance with ES&H 4.9.1, *Environmental Monitoring Data Verification*, to ensure that documentation and data were reported in compliance with established reporting requirements and standard operating procedures (SOPs), and to ensure that all analyses were performed. All analytical results received from the laboratory were reviewed to verify that samples were properly handled according to WSSRAP protocol. The following factors were reviewed and evaluated: sample identification, chain of custody, holding times, sample preservation requirements, sample analysis request forms, data reviews, laboratory tracking, data reporting requirements, and the database transfer.

5.2 Data Review

Data packages were reviewed to ensure that final data were properly identified, analyzed, reported, and that they met data quality requirements (DQRs). The data were also reviewed to check for inconsistencies with the field quality control (QC) samples. Final analytical results were also compared to the preliminary results to identify any changes in data.

During confirmation of WP-437 areas, which included RU015, soil samples were obtained in accordance with the details provided in the *Confirmation Sampling Plan Details for the Disposal Cell Facility* (WP-437) (Ref. 2). This plan indicates that quality control samples were to be taken at a frequency of 1 per 20 samples or 5%. The quality control samples collected included duplicates, field replicates, secondary duplicates, matrix spikes/matrix spike duplicates, and equipment blanks. Since the 5% requirement was based on all WP-437 confirmation sampling, the quality control data will be discussed in a separate report entitled *WP-437 Confirmation Quality Control Results Report.*

5.3 Data Validation

Data validation was performed on 10% of all analytical data generated from the confirmation sampling activities. Data validation was conducted in accordance with ES&H 4.9.2, *Environmental Monitoring Data Validation.* Note that the validation of 10% of the data is based upon all confirmation data collected for WP-437, and not 10% of each work zone. The percentage of confirmation validated will be discussed in the *WP-437 Confirmation Quality Control Results Report.*

6. SUMMARY OF CLOSURE REPORT FINDINGS

The Administration work zone portion requiring confirmation under WP-437 consisted of the seven confirmation units within RU015. Summary information regarding the remedial activities is presented in Section 4 of this report.

6.1 Data Evaluation

Upon completion of remediation activities, preliminary results were used to complete disposition forms in accordance with ES&H 1.2.1, *Soil Remediation Disposition Process*. Based on the preliminary results, each CU was released when disposition forms were reviewed and signed by authorized project personnel.

6.2 Summary of WP-437 Confirmation Results

Table 6-1 provides a summary of the total number of samples collected and analyzed for each contaminant during remedial activities in RU015. The number of results and the minimum, maximum, and average concentrations are also provided for each contaminant. The table was generated using final data sets compiled from all samples that represented soils left in place.

Table 6-1 Summary Totals for RU015

CONTAMINANT	NO. OF SAMPLES	CONCENTRATION RANGE	AVERAGE CONCENTRATION	SURFACE ALARA	SURFACE CRITERIA	RESULTS > ALARA
As (mg/kg)	11	1 4 - 10.8	6.25	45	75	0
Cr (mg/kg)	9	8 4 - 23.3	18.12	90	110	0
Pb (mg/kg)	9	8 - 16.9	12.41	240	450	0
Tl (mg/kg)	11	0.13 - 1.9	0.13	16	20	0
PAH (mg/kg)	9	0.05 - 0.06	0.06	0 44	5.60	0
PCB (mg/kg)	1	0.09	N / A	0.65	8.00	0
Ra-226 (pCi/g)	94	0.24 - 1.25	0.79	5.00	6.20	0
Ra-228 (pCi/g)	94	0.30 - 1.4	0.96	5.00	6.20	0
Total Radium* (pCi/g)	94	0.58 - 2.44	1.75	5.00	6.20	0
Th-230 (pCi/g)	94	0.76 - 1.74	1.16	5.00	6.20	0
Th-232 (pCi/g)	94	0.30 - 1.44	0.98	5.00	6.20	0
U-238 (pCi/g)	94	0.86 - 5.35	1.29	30.00	120.00	0

* Total Radium consists of Ra-226 values plus Ra-228 values.

Final analytical results generated from the remedial activities indicated that the RU015 average concentrations for each COC were below the ALARA goal. COC averages are also below ALARA for all CUs in this work zone. All 100 m^2 averages were less than criteria.

6.3 Summary of Chemical Plant Confirmation Results

To meet the requirements of the ROD, more than 50% of the results for each parameter had to be less than the ALARA goal. Table 6-2 summarizes the cumulative results to date.

Table 6-2 Summary Totals for Confirmation

CONTAMINANT	NO. OF SAMPLES	MINIMUM CONCENTRATION	MAXIMUM CONCENTRATION	AVERAGE CONCENTRATION	RESULTS > ALARA
Arsenic (mg/kg)	2226	0.48	123	8.23	1
Chromium (mg/kg)	2597	1.4	76.2	17.34	0
Pb (mg/kg)	2202	1.8	817	19.19	8
Thallium (mg/kg)	996	0.12	20.3	1 77	2
PAH (mg/kg)	2032	0	14 1	0 12	127
PCB (mg/kg)	2824	0	6.4	0.05	44
TNT (mg/kg)	1192	0.003	34	0 17	2
Ra-226 (pCi/g)	4293	0.13	9 43	1 16	4
Ra-228 (pCi/g)	4102	0.2	6.6	1 13	3
Th-230 (pCi/g)	3557	0.09	23.1	1.60	70
Th-232 (pCi/g)	3579	0.21	6.77	1.12	2
Toluene (mg/kg)	4	0.00	3.40	0 85	0
U-238 (pCi/g)	6143	0.26	228	3.54	76

NOTE: This table contains summary results from cumulative confirmation including WP-253, WP-399, WP-420, WP-458, WP-461, WP-471, WP-437 (RU015, RU016, RU017, RU018, RU019, RU020 and RU023), and WP-551/Task D (RU026)

6.4 Comparison of Standard Deviations

This section compares the estimated standard deviations calculated following U. S. Environmental Protection Agency (EPA) guidance with deviations calculated using confirmation results. Since there were no existing remediation data available to calculate the standard deviation (sigma), the *Chemical Plant Area Cleanup Area Attainment Confirmation Plan* (Ref. 3) estimated sigma using the range (assuming the average concentration remaining after remediation would not exceed cleanup criteria) divided by six. To determine whether the specified level of precision was obtained, a comparison was made between the estimated sigma and the calculated sigma using the RU015 results.

The comparison indicated that the specified level of precision (a false positive = 0.05 and a false negative = 0.20) had been obtained. With the exception of Th-230, all of the calculations were less than estimated sigmas, indicating that the minimum specified precision was met. Table 6-3 presents the estimated sigma and calculated sigmas for each COC.

Table 6-3 Comparison of Standard Deviations

COC	Estimated Sigma(a)	RU015 Sigma (b)	Cumulative Sigma (c)
Arsenic (mg/kg)	12.5	3.19	4.42
Chromium (mg/kg)	18.3	4.53	5.08
Lead (mg/kg)	75	3.49	28.87
Thallium (mg/kg)	3.3	0.62	1.65
PAH (mg/kg)	0.93	0.004	0.52
PCB (mg/kg)	1.33	N / A	0.31
TNT (ug/g)	23.3	N / A	1.33
Ra-226 (pCi/g)	1.03	0.19	0.45
Ra-228 (pCi/g)	1.03	0.27	0.40
Th-230 (pCi/g)	1.03	0.21	1.21
Th-232 (pCi/g)	1.03	0.28	0.42
U-238 (pCi/g)	20	0.69	7.86

(a) Sigma estimated in the *Attainment Plan* (Ref. 3).
(b) Sigma calculated using only the WP437 (RU015) confirmation results.
(c) Sigma calculated using cumulative confirmation results (WP-253, WP-399, WP-458, WP-461, WP-471, WP-437 (RU015, RU016. RU017, RU018, RU019, RU020 and RU023), and WP-551/Task D (RU026).

The cumulative sigma for Th-230 exceeded the estimated sigma. This is a factor of hot spots left in place based upon subsurface criteria in previous CUs. The estimated standard deviation, recalculated for Th-230 using subsurface criteria, was 2.7. The cumulative sigma was less than the estimated subsurface sigma.

7. REFERENCES

1. Department of Energy. *Record of Decision for Remedial Action at the Chemical Plant Area of the Weldon Spring Site.* DOE/OR/21548-376. Oak Ridge Field Office. St. Charles, MO. September 1993.

2. MK-Ferguson and Jacobs Engineering Group. *Confirmation Sampling Plan Details for the Disposal Cell Facility (WP-437)*, Rev 0. DOE/OR/21548-706. Prepared for the U.S. Department of Energy, Oak Ridge Field Office. St. Charles, MO. January 1998.

3. MK-Ferguson and Jacobs Engineering Group. *Chemical Plant Area Cleanup Attainment Confirmation Plan,* Rev. 3. DOE/OR/21548-491. Prepared for the U.S. Department of Energy, Oak Ridge Field Office. St. Charles, MO. December 1995.

4. MK-Ferguson and Jacobs Engineering Group. *Characterization Sampling Plan for the Administration Area Storm Water Sewers*, Rev 0. DOE/OR/21548-819. Prepared for the U.S. Department of Energy, Oak Ridge Field Office. St. Charles, MO. October 1999.

5. MK-Ferguson and Jacobs Engineering Group. *Characterization Plan Details for the Gray Water Line*, Rev 0. DOE/OR/21548-844. Prepared for the U.S. Department of Energy, Oak Ridge Field Office. St. Charles, MO. February 2000.

6. MK-Ferguson and Jacobs Engineering Group. *Characterization Results for the Administration Area Storm Water Sewers*, Rev 0. DOE/OR/21548-831. Prepared for the U.S. Department of Energy, Oak Ridge Field Office. St. Charles, MO. January 2000.

7. MK-Ferguson and Jacobs Engineering Group. *Characterization Results for the Gray Water Line*, Rev 0. DOE/OR/21548-48. Prepared for the U.S. Department of Energy, Oak Ridge Field Office. St. Charles, MO. July 2000.

8. MK-Ferguson Company. *Administration Work Zone Specifications*, Rev. 8. Specification Document No. 3840-7-437-02310. Prepared for the U.S. Department of Energy Weldon Spring Site Remedial Action Project. St. Charles, MO. August 1996.

9. MK-Ferguson Company and Jacobs Engineering Group. *Project Management Contractor Quality Assurance Program*, Rev. 3. DOE/OR/21548-506. Prepared for the U.S. Department of Energy, Oak Ridge Operations Office. St. Charles, MO. November 2000.

10. MK-Ferguson and Jacobs Engineering Group. *Environmental Quality Assurance Project Plan*, Rev. 5. DOE/OR/21548-352. Prepared for the U.S. Department of Energy, Oak Ridge Field Office. St. Charles, MO. November 2000.

11. Oak Ridge Institute for Science and Education. *Final Verification Survey Plan for the Chemical Plant Area Weldon Spring Site Remedial Action Project, Weldon Spring, Missouri.* Prepared by the Environmental Survey and Site Assessment Program, Energy/Environment Systems Division, for the U. S. Department of Energy. Weldon Spring, Missouri. December 7, 1995.

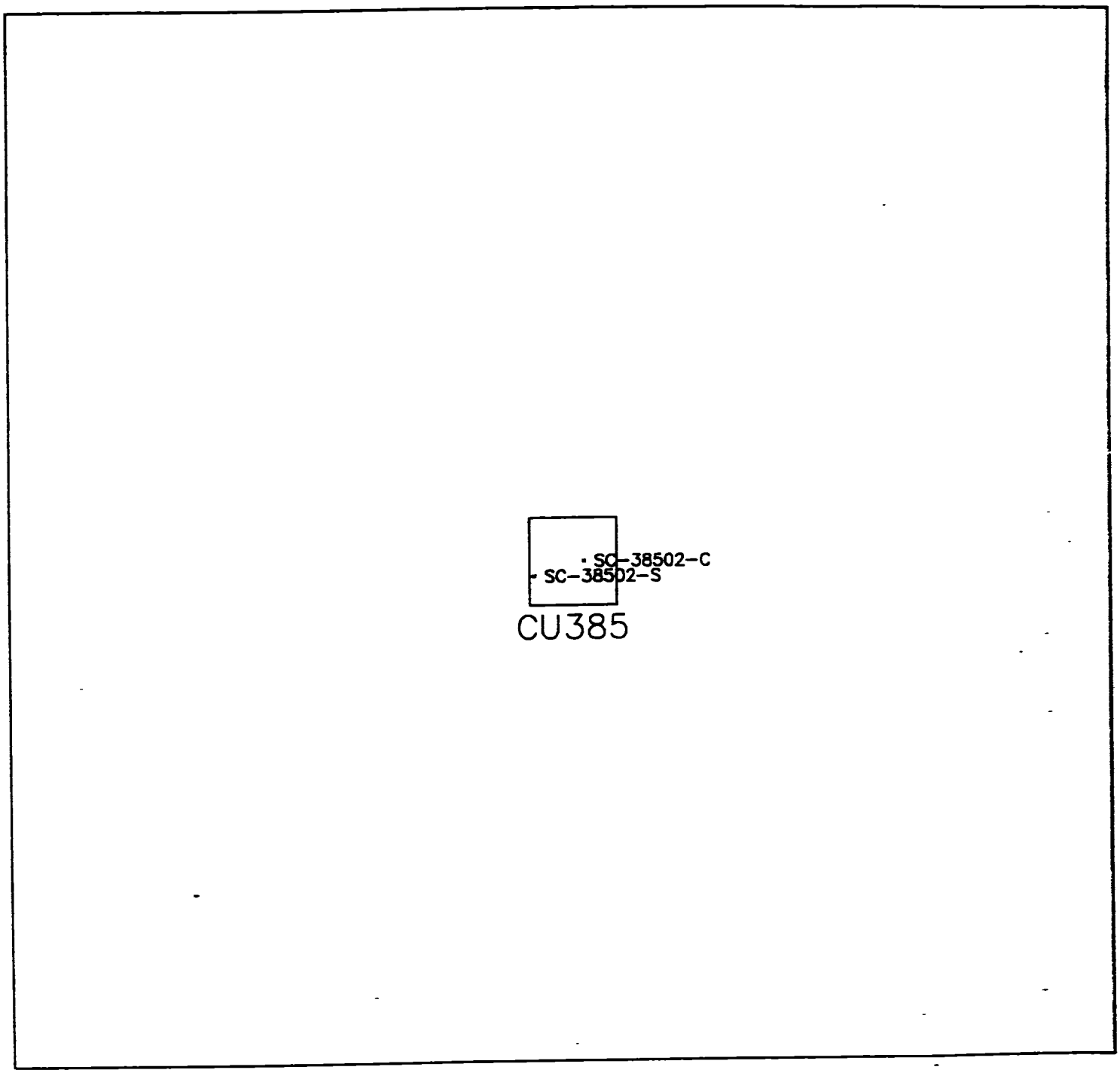
PROCEDURES

ES&H 1.2.1 *Soil Remediation Disposition Process*
ES&H 4.9.1 *Environmental Monitoring Data Verification*
ES&H 4.9.2 *Environmental Monitoring Data Validation*

ACRONYMS

ALARA	as low as reasonably achievable
CLP	Contract Laboratory Program
COC	contaminant of concern
CPM	counts per minute
CU	confirmation unit
DOE	Department of Energy
DQO	Data Quality Objectives
DQR	Data Quality Requirements
EPA	Environmental Protection Agency
EQAPjP	Environmental Quality Assurance Project Plan
ES&H	Environmental Safety and Health
IOC	Interoffice Correspondence
MDNR	Missouri Department of Natural Resources
NaI	sodium iodide
ORISE	Oak Ridge Institute for Science and Education
PMC	Project Management Contractor
QA	quality assurance
QC	quality control
ROD	Record of Decision for Remedial Action at the Chemical Plant Area of the Weldon Spring Site
RU	remedial unit
SOP	standard operating procedure
WP	work package
WSSRAP	Weldon Spring Site Remedial Action Project

APPENDIX A
WP437 RU015 Final Walkover Forms



LEGEND

'SC-32606-S' SAMPLE POINTS PINNED

PINNING LIMITS

N

GRAPHIC SCALE

50 0 25 50

(IN FEET)

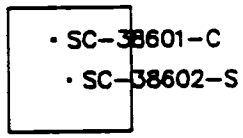
1 inch = 50 ft.

Radiation Survey Form WP 437, RU 15 CU 385

2/10/00

DBD CAD

Meter Model #:	2221	Detector Model #:	NaI 2x2
Meter Serial #:	117617	Detector Serial #:	130764
Calibration Due:	10-13-00	Calibration Due:	09-24-00
Survey Date / Time:	02-07-00	Field Bkg.:	4500 cpm
Surveyor(s):	J. Bonk		
Comments:	All areas < 1.5 Background.		



CU386

LEGEND

• 'SC-32606-S' SAMPLE POINTS PINNED

— · — · — PINNING LIMITS

N

GRAPHIC SCALE

50 0 25 50

(IN FEET)

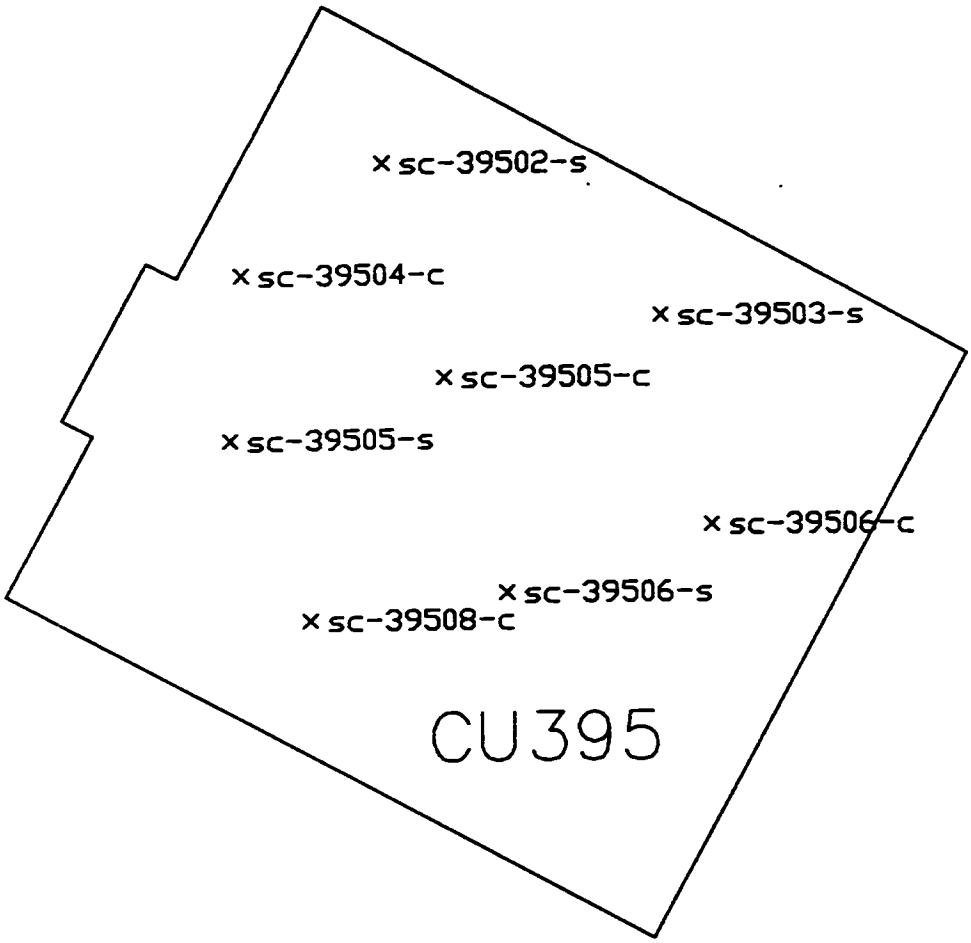
1 inch = 50 ft.

Radiation Survey Form WP 437, RU 15 CU 386

2/10/00

DEO CAD

Meter Model #:	2221	Detector Model #:	NaI 2x2
Meter Serial #:	117617	Detector Serial #:	130764
Calibration Date:	10-13-00	Calibration Date:	09-29-00
Survey Date / Time:	02-08-00	Field Bkg.:	4500 cpm
Surveyor(s):	J. Rambin		
Comments:	All areas < 1.5 Background.		



LEGEND

'SC-32606-S' SAMPLE POINTS PINNED

PINNING LIMITS

N

GRAPHIC SCALE

50 0 20 40

(IN FEET)

1 inch = 20 ft.

Radiation Survey Form WP 437, RU 15 CU 395

DBD CAD

Meter Model #:	2221	Detector Model #:	2x2 NaI 4"
Meter Serial #:	117617	Detector Serial #:	130764
Calibration Due:	10/13/00	Calibration Due:	9/24/00
Survey Date / Time:	2/23/00	Field Bkg.:	4000 cpm
Surveyor(s):	J. Rankins		

Comments: Area was surveyed and found to be less than 1.5 times background

APPENDIX B
WP437 RU015 Final Data

APPENDIX B WP-437 RU15 FINAL DATA

WSSRAP_ID	DATE_SAM	PARAMETER	CONC	DL	UNITS
SC-38201-U	2/10/2000	AROCLOR-1248	0.0165	33	mg/kg
SC-39502-S	2/28/2000	AROCLOR-1248	0.02	40	mg/kg
SC-39503-S	2/28/2000	AROCLOR-1248	0.0215	43	mg/kg
SC-39504-C	2/28/2000	AROCLOR-1248	0.02	40	mg/kg
SC-39505-C	2/28/2000	AROCLOR-1248	0.02	40	mg/kg
SC-39505-S	2/28/2000	AROCLOR-1248	0.02	40	mg/kg
SC-39506-C	2/28/2000	AROCLOR-1248	0.0205	41	mg/kg
SC-39506-S	2/28/2000	AROCLOR-1248	0.02	40	mg/kg
SC-39508-C	2/28/2000	AROCLOR-1248	0.021	42	mg/kg
SC-38201-U	2/10/2000	AROCLOR-1254	0.0165	33	mg/kg
SC-39502-S	2/28/2000	AROCLOR-1254	0.02	40	mg/kg
SC-39503-S	2/28/2000	AROCLOR-1254	0.02	43	mg/kg
SC-39504-C	2/28/2000	AROCLOR-1254	0.02	40	mg/kg
SC-39505-C	2/28/2000	AROCLOR-1254	0.02	40	mg/kg
SC-39505-S	2/28/2000	AROCLOR-1254	0.02	40	mg/kg
SC-39506-C	2/28/2000	AROCLOR-1254	0.0205	41	mg/kg
SC-39506-S	2/28/2000	AROCLOR-1254	0.02	40	mg/kg
SC-39508-C	2/28/2000	AROCLOR-1254	0.021	42	mg/kg
SC-38201-U	2/10/2000	AROCLOR-1260	0.0165	33	mg/kg
SC-39502-S	2/28/2000	AROCLOR-1260	0.02	40	mg/kg
SC-39503-S	2/28/2000	AROCLOR-1260	0.0215	43	mg/kg
SC-39504-C	2/28/2000	AROCLOR-1260	0.02	40	mg/kg
SC-39505-C	2/28/2000	AROCLOR-1260	0.02	40	mg/kg
SC-39505-S	2/28/2000	AROCLOR-1260	0.02	40	mg/kg
SC-39506-C	2/28/2000	AROCLOR-1260	0.0205	41	mg/kg
SC-39506-S	2/28/2000	AROCLOR-1260	0.02	40	mg/kg
SC-39508-C	2/28/2000	AROCLOR-1260	0.021	42	mg/kg
SC-38201-U	2/10/2000	ARSENIC	7.4	0.25	UG/G
SC-38601-C	2/8/2000	ARSENIC	4.7	0.64	UG/G
SC-38602-S	2/8/2000	ARSENIC	4.6	0.7	UG/G
SC-39502-S	2/28/2000	ARSENIC	10.3	0.26	UG/G
SC-39503-S	2/28/2000	ARSENIC	2.9	0.28	UG/G
SC-39504-C	2/28/2000	ARSENIC	10.8	0.27	UG/G
SC-39505-C	2/28/2000	ARSENIC	1.4	0.26	UG/G
SC-39505-S	2/28/2000	ARSENIC	5.7	0.26	UG/G
SC-39506-C	2/28/2000	ARSENIC	7.1	0.27	UG/G
SC-39506-S	2/28/2000	ARSENIC	3.6	0.26	UG/G
SC-39508-C	2/28/2000	ARSENIC	10.2	0.28	UG/G
SC-38201-U	2/10/2000	BENZO(A)ANTHRACENE	0.0175	0.035	mg/kg
SC-38201-U	2/10/2000	BENZO(A)PYRENE	0.0175	0.035	mg/kg
SC-38201-U	2/10/2000	BENZO(B)FLUORANTHENE	0.0175	0.035	mg/kg
SC-38201-U	2/10/2000	BENZO(K)FLUORANTHENE	0.0175	0.035	mg/kg
SC-38201-U	2/10/2000	CHROMIUM	20.1	0.12	UG/G
SC-39502-S	2/28/2000	CHROMIUM	19.1	0.14	UG/G
SC-39503-S	2/28/2000	CHROMIUM	18.9	0.16	UG/G
SC-39504-C	2/28/2000	CHROMIUM	17.9	0.15	UG/G
SC-39505-C	2/28/2000	CHROMIUM	8.4	0.14	UG/G
SC-39505-S	2/28/2000	CHROMIUM	18.6	0.14	UG/G
SC-39506-C	2/28/2000	CHROMIUM	22.7	0.15	UG/G
SC-39506-S	2/28/2000	CHROMIUM	14.1	0.14	UG/G
SC-39508-C	2/28/2000	CHROMIUM	23.3	0.15	UG/G
SC-38201-U	2/10/2000	CHRYSENE	0.0175	0.035	UG/KG
SC-38201-U	2/10/2000	INDENO(1,2,3-CD)PYRENE	0.0175	0.035	UG/KG
SC-38201-U	2/10/2000	LEAD	9.4	0.62	UG/G

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WSSRAP_ID	DATE_SAM	PARAMETER	CONC	DL	UNITS
SC-39502-S	2/28/2000	LEAD	16.6	0.14	UG/G
SC-39503-S	2/28/2000	LEAD	10.7	0 16	UG/G
SC-39504-C	2/28/2000	LEAD	15	0 15	UG/G
SC-39505-C	2/28/2000	LEAD	10.9	0 14	UG/G
SC-39505-S	2/28/2000	LEAD	8	0 14	UG/G
SC-39506-C	2/28/2000	LEAD	9	0 15	UG/G
SC-39506-S	2/28/2000	LEAD	15.2	0 14	UG/G
SC-39508-C	2/28/2000	LEAD	16.9	0 15	UG/G
SC-39502-S	2/28/2000	PERCENT MOISTURE	16.9	0 1	PRCNT
SC-39503-S	2/28/2000	PERCENT MOISTURE	22.7	0.1	PRCNT
SC-39504-C	2/28/2000	PERCENT MOISTURE	17.9	0.1	PRCNT
SC-39505-C	2/28/2000	PERCENT MOISTURE	16.8	0 1	PRCNT
SC-39505-S	2/28/2000	PERCENT MOISTURE	16.7	0.1	PRCNT
SC-39506-C	2/28/2000	PERCENT MOISTURE	19	0.1	PRCNT
SC-39506-S	2/28/2000	PERCENT MOISTURE	16.7	0 1	PRCNT
SC-39508-C	2/28/2000	PERCENT MOISTURE	21.5	0 1	PRCNT
SC-38201-U	2/10/2000	PERCENT SOLID	81	1	PRCNT
SC-38502-C	2/9/2000	PERCENT SOLID	78.1	0 01	PRCNT
SC-38502-S	2/9/2000	PERCENT SOLID	79.4	0 01	PRCNT
SC-38601-C	2/8/2000	PERCENT SOLID	77.9	0.01	PRCNT
SC-38602-S	2/8/2000	PERCENT SOLID	75	0 01	PRCNT
SC-38201-U	2/10/2000	RADIUM-226	0.81	0.24	PCI/G
SC-39502-S	2/28/2000	RADIUM-226	0.94	0.27	PCI/G
SC-39503-S	2/28/2000	RADIUM-226	0.68	0.24	PCI/G
SC-39504-C	2/28/2000	RADIUM-226	0.65	0 27	PCI/G
SC-39505-C	2/28/2000	RADIUM-226	0.77	0 25	PCI/G
SC-39505-S	2/28/2000	RADIUM-226	0.69	0 3	PCI/G
SC-39506-C	2/28/2000	RADIUM-226	0.83	0 25	PCI/G
SC-39506-S	2/28/2000	RADIUM-226	0.69	0 25	PCI/G
SC-39508-C	2/28/2000	RADIUM-226	0.68	0 26	PCI/G
SC-39801-U	5/18/2000	RADIUM-226	0.92	0 22	PCI/G
SC-39802-U	5/18/2000	RADIUM-226	0.81	0 25	PCI/G
SC-39803-U	5/19/2000	RADIUM-226	0.78	0 3	PCI/G
SC-39804-U	5/20/2000	RADIUM-226	0.92	0 2	PCI/G
SC-39805-U	5/20/2000	RADIUM-226	0.83	0.25	PCI/G
SC-39806-U	5/20/2000	RADIUM-226	0.79	0 25	PCI/G
SC-39807-U	5/20/2000	RADIUM-226	0.95	0 23	PCI/G
SC-39808-U	5/20/2000	RADIUM-226	0.81	0.25	PCI/G
SC-39809-U	5/20/2000	RADIUM-226	0.76	0 27	PCI/G
SC-39810-U	5/20/2000	RADIUM-226	0.6	0 27	PCI/G
SC-39811-U	5/20/2000	RADIUM-226	0.68	0 28	PCI/G
SC-39812-U	5/20/2000	RADIUM-226	0.82	0.25	PCI/G
SC-39813-U	5/20/2000	RADIUM-226	0.98	0 24	PCI/G
SC-39903-U	5/30/2000	RADIUM-226	0.67	0 27	PCI/G
SC-39904-U	5/30/2000	RADIUM-226	0.73	0.25	PCI/G
SC-39905-U	5/30/2000	RADIUM-226	0.63	0.25	PCI/G
SC-39906-U	8/9/2000	RADIUM-226	0.26	0 52	PCI/G
SC-39907-U	8/9/2000	RADIUM-226	0.66	0.25	PCI/G
SC-39908-U	8/9/2000	RADIUM-226	0.24	0 48	PCI/G
SC-39909-U	8/9/2000	RADIUM-226	0.77	0.25	PCI/G
SC-39910-U	8/9/2000	RADIUM-226	0.66	0 24	PCI/G
SC-39911-U	8/10/2000	RADIUM-226	0.265	0 53	PCI/G
SC-39912-U	8/10/2000	RADIUM-226	0.27	0 54	PCI/G
SC-39913-U	8/10/2000	RADIUM-226	0 71	0 25	PCI/G
SC-39914-U	8/10/2000	RADIUM-226	0.245	0.49	PCI/G

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WSSRAP_ID	DATE_SAM	PARAMETER	CONC	DL	UNITS
SC-39915-U	8/11/2000	RADIUM-226	0.88	0.27	PCI/G
SC-39916-U	8/11/2000	RADIUM-226	0.84	0.19	PCI/G
SC-39917-U	8/11/2000	RADIUM-226	0.88	0.27	PCI/G
SC-39918-U	8/11/2000	RADIUM-226	0.89	0.24	PCI/G
SC-39919-U	8/11/2000	RADIUM-226	0.93	0.25	PCI/G
SC-39920-U	8/11/2000	RADIUM-226	0.94	0.25	PCI/G
SC-39921-U	8/12/2000	RADIUM-226	0.79	0.26	PCI/G
SC-39922-U	8/12/2000	RADIUM-226	0.74	0.24	PCI/G
SC-39923-U	8/12/2000	RADIUM-226	0.74	0.25	PCI/G
SC-39924-U	8/12/2000	RADIUM-226	0.88	0.22	PCI/G
SC-39925-U	8/12/2000	RADIUM-226	0.76	0.24	PCI/G
SC-39926-U	8/12/2000	RADIUM-226	1	0.25	PCI/G
SC-39927-U	8/12/2000	RADIUM-226	0.92	0.25	PCI/G
SC-39928-U	8/12/2000	RADIUM-226	0.79	0.27	PCI/G
SC-39929-U	8/14/2000	RADIUM-226	0.97	0.32	PCI/G
SC-39930-U	8/14/2000	RADIUM-226	1.21	0.22	PCI/G
SC-39931-U	8/14/2000	RADIUM-226	0.93	0.3	PCI/G
SC-39932-U	8/14/2000	RADIUM-226	0.97	0.27	PCI/G
SC-39933-U	8/14/2000	RADIUM-226	0.85	0.27	PCI/G
SC-39934-U	8/14/2000	RADIUM-226	1.25	0.23	PCI/G
SC-39935-U	8/14/2000	RADIUM-226	1.06	0.3	PCI/G
SC-39936-U	8/14/2000	RADIUM-226	0.88	0.25	PCI/G
SC-39937-U	8/15/2000	RADIUM-226	0.95	0.28	PCI/G
SC-39938-U	8/15/2000	RADIUM-226	1	0.25	PCI/G
SC-39939-U	8/15/2000	RADIUM-226	1.03	0.24	PCI/G
SC-39940-U	8/15/2000	RADIUM-226	1.02	0.23	PCI/G
SC-39941-U	8/16/2000	RADIUM-226	0.93	0.23	PCI/G
SC-39942-U	8/16/2000	RADIUM-226	1.03	0.27	PCI/G
SC-39943-U	8/16/2000	RADIUM-226	0.92	0.25	PCI/G
SC-39944-U	8/17/2000	RADIUM-226	0.37	0.24	PCI/G
SC-39945-U	8/17/2000	RADIUM-226	0.65	0.23	PCI/G
SC-39946-U	8/17/2000	RADIUM-226	0.84	0.26	PCI/G
SC-41401-U	8/19/2000	RADIUM-226	0.87	0.23	PCI/G
SC-41402-U	8/19/2000	RADIUM-226	0.82	0.25	PCI/G
SC-41403-U	8/19/2000	RADIUM-226	0.89	0.25	PCI/G
SC-41404-U	8/19/2000	RADIUM-226	0.77	0.28	PCI/G
SC-41405-U	8/19/2000	RADIUM-226	0.86	0.26	PCI/G
SC-41406-U	8/19/2000	RADIUM-226	0.92	0.25	PCI/G
SC-41407-U	8/19/2000	RADIUM-226	0.74	0.24	PCI/G
SC-41408-U	8/20/2000	RADIUM-226	0.65	0.2	PCI/G
SC-41409-U	8/20/2000	RADIUM-226	0.79	0.26	PCI/G
SC-41410-U	8/20/2000	RADIUM-226	0.97	0.26	PCI/G
SC-41411-U	8/21/2000	RADIUM-226	0.74	0.26	PCI/G
SC-41412-U	8/21/2000	RADIUM-226	0.74	0.29	PCI/G
SC-41413-U	8/21/2000	RADIUM-226	0.63	0.29	PCI/G
SC-41414-U	8/21/2000	RADIUM-226	0.81	0.27	PCI/G
SC-41415-U	8/23/2000	RADIUM-226	0.72	0.26	PCI/G
SC-41416-U	8/23/2000	RADIUM-226	0.93	0.25	PCI/G
SC-41417-U	8/23/2000	RADIUM-226	0.62	0.23	PCI/G
SC-41418-U	8/23/2000	RADIUM-226	0.72	0.26	PCI/G
SC-41419-U	8/23/2000	RADIUM-226	0.9	0.27	PCI/G
SC-41420-U	8/25/2000	RADIUM-226	0.8	0.3	PCI/G
SC-41421-U	8/25/2000	RADIUM-226	0.74	0.25	PCI/G
SC-41422-U	8/25/2000	RADIUM-226	0.91	0.26	PCI/G
SC-41423-U	2/20/2001	RADIUM-226	0.71	0.3	PCI/G

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WSSRAP_ID	DATE_SAM	PARAMETER	CONC	DL	UNITS
SC-41424-U	2/20/2001	RADIUM-226	0.87	0 25	PCI/G
SC-41425-U	2/20/2001	RADIUM-226	0.96	0.23	PCI/G
SC-41426-U	2/22/2001	RADIUM-226	0.67	0.24	PCI/G
SC-41427-U	2/22/2001	RADIUM-226	0.72	0 26	PCI/G
SC-41428-U	2/23/2001	RADIUM-226	0.61	0 24	PCI/G
SC-38201-U	2/10/2000	RADIUM-228	1.03	0 38	PCI/G
SC-39502-S	2/28/2000	RADIUM-228	0.87	0 43	PCI/G
SC-39503-S	2/28/2000	RADIUM-228	1.1	0 4	PCI/G
SC-39504-C	2/28/2000	RADIUM-228	0.86	0 38	PCI/G
SC-39505-C	2/28/2000	RADIUM-228	1	0 33	PCI/G
SC-39505-S	2/28/2000	RADIUM-228	0.39	0.78	PCI/G
SC-39506-C	2/28/2000	RADIUM-228	0 79	0 38	PCI/G
SC-39506-S	2/28/2000	RADIUM-228	1.1	0 37	PCI/G
SC-39508-C	2/28/2000	RADIUM-228	1.19	0.46	PCI/G
SC-39801-U	5/18/2000	RADIUM-228	0.87	0.39	PCI/G
SC-39802-U	5/18/2000	RADIUM-228	1	0 34	PCI/G
SC-39803-U	5/19/2000	RADIUM-228	0.87	0 44	PCI/G
SC-39804-U	5/20/2000	RADIUM-228	1.11	0 36	PCI/G
SC-39805-U	5/20/2000	RADIUM-228	0.96	0 47	PCI/G
SC-39806-U	5/20/2000	RADIUM-228	1.03	0 35	PCI/G
SC-39807-U	5/20/2000	RADIUM-228	1	0 49	PCI/G
SC-39808-U	5/20/2000	RADIUM-228	1.11	0 33	PCI/G
SC-39809-U	5/20/2000	RADIUM-228	0.41	0 82	PCI/G
SC-39810-U	5/20/2000	RADIUM-228	1 01	0 37	PCI/G
SC-39811-U	5/20/2000	RADIUM-228	1.01	0 45	PCI/G
SC-39812-U	5/20/2000	RADIUM-228	0.98	0 36	PCI/G
SC-39813-U	5/20/2000	RADIUM-228	1 01	0.34	PCI/G
SC-39903-U	5/30/2000	RADIUM-228	1.28	0.41	PCI/G
SC-39904-U	5/30/2000	RADIUM-228	1.2	0 37	PCI/G
SC-39905-U	5/30/2000	RADIUM-228	0.97	0 38	PCI/G
SC-39906-U	8/9/2000	RADIUM-228	0.395	0 79	PCI/G
SC-39907-U	8/9/2000	RADIUM-228	1.12	0 33	PCI/G
SC-39908-U	8/9/2000	RADIUM-228	0 34	0 68	PCI/G
SC-39909-U	8/9/2000	RADIUM-228	1 01	0 37	PCI/G
SC-39910-U	8/9/2000	RADIUM-228	0.99	0 39	PCI/G
SC-39911-U	8/10/2000	RADIUM-228	0.41	0 82	PCI/G
SC-39912-U	8/10/2000	RADIUM-228	0 365	0 73	PCI/G
SC-39913-U	8/10/2000	RADIUM-228	0 92	0 35	PCI/G
SC-39914-U	8/10/2000	RADIUM-228	1 17	0 43	PCI/G
SC-39915-U	8/11/2000	RADIUM-228	1 08	0 32	PCI/G
SC-39916-U	8/11/2000	RADIUM-228	0.85	0 38	PCI/G
SC-39917-U	8/11/2000	RADIUM-228	1.12	0 4	PCI/G
SC-39918-U	8/11/2000	RADIUM-228	1.05	0 35	PCI/G
SC-39919-U	8/11/2000	RADIUM-228	0.86	0.38	PCI/G
SC-39920-U	8/11/2000	RADIUM-228	0.99	0 38	PCI/G
SC-39921-U	8/12/2000	RADIUM-228	1.04	0 35	PCI/G
SC-39922-U	8/12/2000	RADIUM-228	1.07	0 37	PCI/G
SC-39923-U	8/12/2000	RADIUM-228	0 75	0 3	PCI/G
SC-39924-U	8/12/2000	RADIUM-228	1.16	0 33	PCI/G
SC-39925-U	8/12/2000	RADIUM-228	0.78	0 35	PCI/G
SC-39926-U	8/12/2000	RADIUM-228	1.28	0.33	PCI/G
SC-39927-U	8/12/2000	RADIUM-228	0 81	0.37	PCI/G
SC-39928-U	8/12/2000	RADIUM-228	1 03	0 35	PCI/G
SC-39929-U	8/14/2000	RADIUM-228	1.06	0 48	PCI/G
SC-39930-U	8/14/2000	RADIUM-228	1.23	0 38	PCI/G

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WSSRAP_ID	DATE_SAM	PARAMETER	CONC	DL	UNITS
SC-39931-U	8/14/2000	RADIUM-228	1.4	0.47	PCI/G
SC-39932-U	8/14/2000	RADIUM-228	1.1	0.35	PCI/G
SC-39933-U	8/14/2000	RADIUM-228	0.46	0.92	PCI/G
SC-39934-U	8/14/2000	RADIUM-228	1.15	0.36	PCI/G
SC-39935-U	8/14/2000	RADIUM-228	0.99	0.44	PCI/G
SC-39936-U	8/14/2000	RADIUM-228	1.21	0.29	PCI/G
SC-39937-U	8/15/2000	RADIUM-228	0.365	0.73	PCI/G
SC-39938-U	8/15/2000	RADIUM-228	1.11	0.34	PCI/G
SC-39939-U	8/15/2000	RADIUM-228	0.375	0.75	PCI/G
SC-39940-U	8/15/2000	RADIUM-228	0.93	0.38	PCI/G
SC-39941-U	8/16/2000	RADIUM-228	1.08	0.35	PCI/G
SC-39942-U	8/16/2000	RADIUM-228	0.375	0.75	PCI/G
SC-39943-U	8/16/2000	RADIUM-228	1.11	0.31	PCI/G
SC-39944-U	8/17/2000	RADIUM-228	0.295	0.59	PCI/G
SC-39945-U	8/17/2000	RADIUM-228	1.1	0.31	PCI/G
SC-39946-U	8/17/2000	RADIUM-228	1.08	0.46	PCI/G
SC-41401-U	8/19/2000	RADIUM-228	1.03	0.34	PCI/G
SC-41402-U	8/19/2000	RADIUM-228	0.88	0.43	PCI/G
SC-41403-U	8/19/2000	RADIUM-228	1.13	0.37	PCI/G
SC-41404-U	8/19/2000	RADIUM-228	0.4	0.8	PCI/G
SC-41405-U	8/19/2000	RADIUM-228	1.04	0.37	PCI/G
SC-41406-U	8/19/2000	RADIUM-228	1.13	0.43	PCI/G
SC-41407-U	8/19/2000	RADIUM-228	1.16	0.3	PCI/G
SC-41408-U	8/20/2000	RADIUM-228	1.16	0.39	PCI/G
SC-41409-U	8/20/2000	RADIUM-228	0.83	0.34	PCI/G
SC-41410-U	8/20/2000	RADIUM-228	1.08	0.42	PCI/G
SC-41411-U	8/21/2000	RADIUM-228	1.18	0.29	PCI/G
SC-41412-U	8/21/2000	RADIUM-228	1.23	0.45	PCI/G
SC-41413-U	8/21/2000	RADIUM-228	1.18	0.3	PCI/G
SC-41414-U	8/21/2000	RADIUM-228	0.415	0.83	PCI/G
SC-41415-U	8/23/2000	RADIUM-228	1.03	0.51	PCI/G
SC-41416-U	8/23/2000	RADIUM-228	1.25	0.3	PCI/G
SC-41417-U	8/23/2000	RADIUM-228	1.16	0.41	PCI/G
SC-41418-U	8/23/2000	RADIUM-228	1.12	0.38	PCI/G
SC-41419-U	8/23/2000	RADIUM-228	1.11	0.49	PCI/G
SC-41420-U	8/25/2000	RADIUM-228	0.88	0.46	PCI/G
SC-41421-U	8/25/2000	RADIUM-228	0.98	0.34	PCI/G
SC-41422-U	8/25/2000	RADIUM-228	1.34	0.51	PCI/G
SC-41423-U	2/20/2001	RADIUM-228	0.435	0.87	PCI/G
SC-41424-U	2/20/2001	RADIUM-228	1.26	0.35	PCI/G
SC-41425-U	2/20/2001	RADIUM-228	1.07	0.37	PCI/G
SC-41426-U	2/22/2001	RADIUM-228	1.33	0.34	PCI/G
SC-41427-U	2/22/2001	RADIUM-228	0.92	0.43	PCI/G
SC-41428-U	2/23/2001	RADIUM-228	1.07	0.33	PCI/G
SC-38201-U	2/10/2000	THALLIUM	0.125	0.25	UG/G
SC-38502-C	2/9/2000	THALLIUM	0.395	0.79	UG/G
SC-38502-S	2/9/2000	THALLIUM	1.5	0.71	UG/G
SC-39502-S	2/28/2000	THALLIUM	1.6	0.36	UG/G
SC-39503-S	2/28/2000	THALLIUM	1.1	0.39	UG/G
SC-39504-C	2/28/2000	THALLIUM	1.3	0.37	UG/G
SC-39505-C	2/28/2000	THALLIUM	0.18	0.36	UG/G
SC-39505-S	2/28/2000	THALLIUM	1.3	0.36	UG/G
SC-39506-C	2/28/2000	THALLIUM	1.2	0.37	UG/G
SC-39506-S	2/28/2000	THALLIUM	0.36	0.36	UG/G
SC-39508-C	2/28/2000	THALLIUM	1.9	0.38	UG/G

APPENDIX B WP-437 RU15 FINAL DATA

WSSRAP_ID	DATE_SAM	PARAMETER	CONC	DL	UNITS
SC-38201-U	2/10/2000	THORIUM-230	1	0 65	PCI/G
SC-39502-S	2/28/2000	THORIUM-230	1.39	0 65	PCI/G
SC-39503-S	2/28/2000	THORIUM-230	1 26	0 62	PCI/G
SC-39504-C	2/28/2000	THORIUM-230	1.32	0 67	PCI/G
SC-39505-C	2/28/2000	THORIUM-230	0.98	0.62	PCI/G
SC-39505-S	2/28/2000	THORIUM-230	0.9	0.65	PCI/G
SC-39506-C	2/28/2000	THORIUM-230	1 16	0 67	PCI/G
SC-39506-S	2/28/2000	THORIUM-230	1.3	0 62	PCI/G
SC-39508-C	2/28/2000	THORIUM-230	1.24	0 65	PCI/G
SC-39801-U	5/18/2000	THORIUM-230	1.3	0 62	PCI/G
SC-39802-U	5/18/2000	THORIUM-230	0.97	0 62	PCI/G
SC-39803-U	5/19/2000	THORIUM-230	1.52	0 64	PCI/G
SC-39804-U	5/20/2000	THORIUM-230	1.07	0.64	PCI/G
SC-39805-U	5/20/2000	THORIUM-230	0.76	0 64	PCI/G
SC-39806-U	5/20/2000	THORIUM-230	1.26	0.64	PCI/G
SC-39807-U	5/20/2000	THORIUM-230	0.93	0.64	PCI/G
SC-39808-U	5/20/2000	THORIUM-230	1.15	0 64	PCI/G
SC-39809-U	5/20/2000	THORIUM-230	1.24	0 64	PCI/G
SC-39810-U	5/20/2000	THORIUM-230	0.97	0 64	PCI/G
SC-39811-U	5/20/2000	THORIUM-230	1 57	0.64	PCI/G
SC-39812-U	5/20/2000	THORIUM-230	1 04	0 64	PCI/G
SC-39813-U	5/20/2000	THORIUM-230	1.01	0 64	PCI/G
SC-39903-U	5/30/2000	THORIUM-230	1.74	0 65	PCI/G
SC-39904-U	5/30/2000	THORIUM-230	0.95	0 64	PCI/G
SC-39905-U	5/30/2000	THORIUM-230	1 12	0.65	PCI/G
SC-39906-U	8/9/2000	THORIUM-230	1.13	0 64	PCI/G
SC-39907-U	8/9/2000	THORIUM-230	1 58	0 64	PCI/G
SC-39908-U	8/9/2000	THORIUM-230	1 15	0 64	PCI/G
SC-39909-U	8/9/2000	THORIUM-230	1.14	0 64	PCI/G
SC-39910-U	8/9/2000	THORIUM-230	1.04	0 64	PCI/G
SC-39911-U	8/10/2000	THORIUM-230	1 52	0 64	PCI/G
SC-39912-U	8/10/2000	THORIUM-230	1.03	0 64	PCI/G
SC-39913-U	8/10/2000	THORIUM-230	1.35	0 64	PCI/G
SC-39914-U	8/10/2000	THORIUM-230	1 14	0 64	PCI/G
SC-39915-U	8/11/2000	THORIUM-230	1 25	0.64	PCI/G
SC-39916-U	8/11/2000	THORIUM-230	1.28	0 64	PCI/G
SC-39917-U	8/11/2000	THORIUM-230	1 3	0 64	PCI/G
SC-39918-U	8/11/2000	THORIUM-230	1.23	0 62	PCI/G
SC-39919-U	8/11/2000	THORIUM-230	1 2	0 64	PCI/G
SC-39920-U	8/11/2000	THORIUM-230	0.89	0 64	PCI/G
SC-39921-U	8/12/2000	THORIUM-230	1.06	0 64	PCI/G
SC-39922-U	8/12/2000	THORIUM-230	1.31	0 64	PCI/G
SC-39923-U	8/12/2000	THORIUM-230	1	0 62	PCI/G
SC-39924-U	8/12/2000	THORIUM-230	1 64	0 64	PCI/G
SC-39925-U	8/12/2000	THORIUM-230	1 19	0 62	PCI/G
SC-39926-U	8/12/2000	THORIUM-230	1.21	0 64	PCI/G
SC-39927-U	8/12/2000	THORIUM-230	1 29	0 64	PCI/G
SC-39928-U	8/12/2000	THORIUM-230	1.07	0 64	PCI/G
SC-39929-U	8/14/2000	THORIUM-230	1 14	0 64	PCI/G
SC-39930-U	8/14/2000	THORIUM-230	1.39	0 64	PCI/G
SC-39931-U	8/14/2000	THORIUM-230	0.99	0 62	PCI/G
SC-39932-U	8/14/2000	THORIUM-230	1.06	0 64	PCI/G
SC-39933-U	8/14/2000	THORIUM-230	0.94	0 64	PCI/G
SC-39934-U	8/14/2000	THORIUM-230	1.21	0 62	PCI/G
SC-39935-U	8/14/2000	THORIUM-230	1 21	0.64	PCI/G

APPENDIX B WP-437 RU15 FINAL DATA

WSSRAP_ID	DATE_SAM	PARAMETER	CONC	DL	UNITS
SC-39936-U	8/14/2000	THORIUM-230	0.8	0.62	PCI/G
SC-39937-U	8/15/2000	THORIUM-230	1.15	0.64	PCI/G
SC-39938-U	8/15/2000	THORIUM-230	0.9	0.64	PCI/G
SC-39939-U	8/15/2000	THORIUM-230	0.89	0.64	PCI/G
SC-39940-U	8/15/2000	THORIUM-230	1.39	0.65	PCI/G
SC-39941-U	8/16/2000	THORIUM-230	1.21	0.65	PCI/G
SC-39942-U	8/16/2000	THORIUM-230	0.86	0.64	PCI/G
SC-39943-U	8/16/2000	THORIUM-230	0.97	0.64	PCI/G
SC-39944-U	8/17/2000	THORIUM-230	1.22	0.65	PCI/G
SC-39945-U	8/17/2000	THORIUM-230	1.07	0.64	PCI/G
SC-39946-U	8/17/2000	THORIUM-230	0.97	0.64	PCI/G
SC-41401-U	8/19/2000	THORIUM-230	1.39	0.64	PCI/G
SC-41402-U	8/19/2000	THORIUM-230	1.35	0.64	PCI/G
SC-41403-U	8/19/2000	THORIUM-230	1.03	0.65	PCI/G
SC-41404-U	8/19/2000	THORIUM-230	1.11	0.64	PCI/G
SC-41405-U	8/19/2000	THORIUM-230	1.58	0.64	PCI/G
SC-41406-U	8/19/2000	THORIUM-230	1.26	0.65	PCI/G
SC-41407-U	8/19/2000	THORIUM-230	0.84	0.64	PCI/G
SC-41408-U	8/20/2000	THORIUM-230	0.9	0.64	PCI/G
SC-41409-U	8/20/2000	THORIUM-230	1.31	0.65	PCI/G
SC-41410-U	8/20/2000	THORIUM-230	0.91	0.64	PCI/G
SC-41411-U	8/21/2000	THORIUM-230	1.09	0.64	PCI/G
SC-41412-U	8/21/2000	THORIUM-230	1.25	0.65	PCI/G
SC-41413-U	8/21/2000	THORIUM-230	1.35	0.64	PCI/G
SC-41414-U	8/21/2000	THORIUM-230	0.93	0.64	PCI/G
SC-41415-U	8/23/2000	THORIUM-230	1.14	0.64	PCI/G
SC-41416-U	8/23/2000	THORIUM-230	1.32	0.65	PCI/G
SC-41417-U	8/23/2000	THORIUM-230	1.37	0.64	PCI/G
SC-41418-U	8/23/2000	THORIUM-230	1.24	0.64	PCI/G
SC-41419-U	8/23/2000	THORIUM-230	1.21	0.65	PCI/G
SC-41420-U	8/25/2000	THORIUM-230	1.39	0.64	PCI/G
SC-41421-U	8/25/2000	THORIUM-230	1.12	0.64	PCI/G
SC-41422-U	8/25/2000	THORIUM-230	1.04	0.64	PCI/G
SC-41423-U	2/20/2001	THORIUM-230	0.97	0.65	PCI/G
SC-41424-U	2/20/2001	THORIUM-230	0.82	0.62	PCI/G
SC-41425-U	2/20/2001	THORIUM-230	0.91	0.65	PCI/G
SC-41426-U	2/22/2001	THORIUM-230	1.31	0.62	PCI/G
SC-41427-U	2/22/2001	THORIUM-230	1.5	0.65	PCI/G
SC-41428-U	2/23/2001	THORIUM-230	1.31	0.62	PCI/G
SC-38201-U	2/10/2000	URANIUM-238	1.155	2.31	PCI/G
SC-39502-S	2/28/2000	URANIUM-238	1.22	2.44	PCI/G
SC-39503-S	2/28/2000	URANIUM-238	1.115	2.23	PCI/G
SC-39504-C	2/28/2000	URANIUM-238	1.08	2.16	PCI/G
SC-39505-C	2/28/2000	URANIUM-238	1.15	2.3	PCI/G
SC-39505-S	2/28/2000	URANIUM-238	1.05	2.1	PCI/G
SC-39506-C	2/28/2000	URANIUM-238	1.105	2.21	PCI/G
SC-39506-S	2/28/2000	URANIUM-238	1.11	2.22	PCI/G
SC-39508-C	2/28/2000	URANIUM-238	1.115	2.23	PCI/G
SC-39801-U	5/18/2000	URANIUM-238	1.17	2.34	PCI/G
SC-39802-U	5/18/2000	URANIUM-238	1.09	2.18	PCI/G
SC-39803-U	5/19/2000	URANIUM-238	1.045	2.09	PCI/G
SC-39804-U	5/20/2000	URANIUM-238	1.105	2.21	PCI/G
SC-39805-U	5/20/2000	URANIUM-238	1.335	2.67	PCI/G
SC-39806-U	5/20/2000	URANIUM-238	1.12	2.24	PCI/G
SC-39807-U	5/20/2000	URANIUM-238	1.13	2.26	PCI/G

APPENDIX B WP-437 RU15 FINAL DATA

WSSRAP_ID	DATE_SAM	PARAMETER	CONC	DL	UNITS
SC-39808-U	5/20/2000	URANIUM-238	1.155	2 31	PCI/G
SC-39809-U	5/20/2000	URANIUM-238	1.07	2 14	PCI/G
SC-39810-U	5/20/2000	URANIUM-238	1.11	2.22	PCI/G
SC-39811-U	5/20/2000	URANIUM-238	1.055	2 11	PCI/G
SC-39812-U	5/20/2000	URANIUM-238	1.18	2 36	PCI/G
SC-39813-U	5/20/2000	URANIUM-238	1.165	2.33	PCI/G
SC-39903-U	5/30/2000	URANIUM-238	1.16	2 32	PCI/G
SC-39904-U	5/30/2000	URANIUM-238	1 115	2.23	PCI/G
SC-39905-U	5/30/2000	URANIUM-238	1.185	2 37	PCI/G
SC-39906-U	8/9/2000	URANIUM-238	1.11	2 22	PCI/G
SC-39907-U	8/9/2000	URANIUM-238	1.13	2 26	PCI/G
SC-39908-U	8/9/2000	URANIUM-238	1 105	2 21	PCI/G
SC-39909-U	8/9/2000	URANIUM-238	1.13	2 26	PCI/G
SC-39910-U	8/9/2000	URANIUM-238	1 16	2 32	PCI/G
SC-39911-U	8/10/2000	URANIUM-238	1 16	2 32	PCI/G
SC-39912-U	8/10/2000	URANIUM-238	0 945	1 89	PCI/G
SC-39913-U	8/10/2000	URANIUM-238	1.12	2.24	PCI/G
SC-39914-U	8/10/2000	URANIUM-238	0 97	1 94	PCI/G
SC-39915-U	8/11/2000	URANIUM-238	1 085	2 17	PCI/G
SC-39916-U	8/11/2000	URANIUM-238	1.44	1 85	PCI/G
SC-39917-U	8/11/2000	URANIUM-238	1 14	2 28	PCI/G
SC-39918-U	8/11/2000	URANIUM-238	1.14	2 28	PCI/G
SC-39919-U	8/11/2000	URANIUM-238	1.075	2 15	PCI/G
SC-39920-U	8/11/2000	URANIUM-238	1.115	2 23	PCI/G
SC-39921-U	8/12/2000	URANIUM-238	1.075	2 15	PCI/G
SC-39922-U	8/12/2000	URANIUM-238	1.145	2 29	PCI/G
SC-39923-U	8/12/2000	URANIUM-238	1 03	2 06	PCI/G
SC-39924-U	8/12/2000	URANIUM-238	1.125	2 25	PCI/G
SC-39925-U	8/12/2000	URANIUM-238	4.56	1 85	PCI/G
SC-39926-U	8/12/2000	URANIUM-238	1 205	2 41	PCI/G
SC-39927-U	8/12/2000	URANIUM-238	1 17	2 34	PCI/G
SC-39928-U	8/12/2000	URANIUM-238	1.195	2 39	PCI/G
SC-39929-U	8/14/2000	URANIUM-238	1 18	2 36	PCI/G
SC-39930-U	8/14/2000	URANIUM-238	1.315	2 63	PCI/G
SC-39931-U	8/14/2000	URANIUM-238	1 185	2 37	PCI/G
SC-39932-U	8/14/2000	URANIUM-238	1.32	2 64	PCI/G
SC-39933-U	8/14/2000	URANIUM-238	4 59	2 43	PCI/G
SC-39934-U	8/14/2000	URANIUM-238	1.12	2 24	PCI/G
SC-39935-U	8/14/2000	URANIUM-238	1 2	2 4	PCI/G
SC-39936-U	8/14/2000	URANIUM-238	1 1	2 2	PCI/G
SC-39937-U	8/15/2000	URANIUM-238	1 07	2 14	PCI/G
SC-39938-U	8/15/2000	URANIUM-238	1 145	2 29	PCI/G
SC-39939-U	8/15/2000	URANIUM-238	1.13	2 26	PCI/G
SC-39940-U	8/15/2000	URANIUM-238	1 145	2 29	PCI/G
SC-39941-U	8/16/2000	URANIUM-238	1 11	2 22	PCI/G
SC-39942-U	8/16/2000	URANIUM-238.	1.165	2 33	PCI/G
SC-39943-U	8/16/2000	URANIUM-238	1.12	2 24	PCI/G
SC-39944-U	8/17/2000	URANIUM-238	0.855	1 71	PCI/G
SC-39945-U	8/17/2000	URANIUM-238	1.125	2.25	PCI/G
SC-39946-U	8/17/2000	URANIUM-238	1.045	2 09	PCI/G
SC-41401-U	8/19/2000	URANIUM-238	1.175	2 35	PCI/G
SC-41402-U	8/19/2000	URANIUM-238	1 115	2 23	PCI/G
SC-41403-U	8/19/2000	URANIUM-238	1 145	2 29	PCI/G
SC-41404-U	8/19/2000	URANIUM-238	1 095	2 19	PCI/G
SC-41405-U	8/19/2000	URANIUM-238	1 095	2 19	PCI/G

APPENDIX B WP-437 RU15 FINAL DATA

WSSRAP_ID	DATE_SAM	PARAMETER	CONC	DL	UNITS
SC-41406-U	8/19/2000	URANIUM-238	1.045	2.09	PCI/G
SC-41407-U	8/19/2000	URANIUM-238	1.09	2.18	PCI/G
SC-41408-U	8/20/2000	URANIUM-238	1.1	2.2	PCI/G
SC-41409-U	8/20/2000	URANIUM-238	2.72	2.02	PCI/G
SC-41410-U	8/20/2000	URANIUM-238	1.265	2.53	PCI/G
SC-41411-U	8/21/2000	URANIUM-238	5.35	2.18	PCI/G
SC-41412-U	8/21/2000	URANIUM-238	1.1	2.2	PCI/G
SC-41413-U	8/21/2000	URANIUM-238	1.18	2.36	PCI/G
SC-41414-U	8/21/2000	URANIUM-238	1.14	2.28	PCI/G
SC-41415-U	8/23/2000	URANIUM-238	1.215	2.43	PCI/G
SC-41416-U	8/23/2000	URANIUM-238	1.105	2.21	PCI/G
SC-41417-U	8/23/2000	URANIUM-238	1.1	2.2	PCI/G
SC-41418-U	8/23/2000	URANIUM-238	1.08	2.16	PCI/G
SC-41419-U	8/23/2000	URANIUM-238	2.33	2.15	PCI/G
SC-41420-U	8/25/2000	URANIUM-238	1.36	2.72	PCI/G
SC-41421-U	8/25/2000	URANIUM-238	1.115	2.23	PCI/G
SC-41422-U	8/25/2000	URANIUM-238	1.1	2.2	PCI/G
SC-41423-U	2/20/2001	URANIUM-238	1.47	2.94	PCI/G
SC-41424-U	2/20/2001	URANIUM-238	1.12	2.24	PCI/G
SC-41425-U	2/20/2001	URANIUM-238	1.075	2.15	PCI/G
SC-41426-U	2/22/2001	URANIUM-238	1.135	2.27	PCI/G
SC-41427-U	2/22/2001	URANIUM-238	1.34	2.68	PCI/G
SC-41428-U	2/23/2001	URANIUM-238	1.115	2.23	PCI/G

APPENDIX C
WP437 RU015 Sample Location Coordinates

WP437 RU15 SAMPLE LOCATION COORDINATES

SAMPLE LOCATION	SAMPLE DATE	NORTHING	EASTING	ELEVATION
SC-38201-U	2/10/2000	1042742.47	755826.68	648.18
SC-38502-S	2/10/2000	1042738.41	755995.37	650.37
SC-38502-C	2/9/2000	1042743.63	756012.51	646.51
SC-38601-C	2/8/2000	1042582.57	756423.96	645.76
SC-38602-S	2/8/2000	1042571.29	756428.20	645.97
SC-39502-S	2/28/2000	1042834.57	755823.60	648.70
SC-39503-S	2/28/2000	1042818.54	755852.23	642.00
SC-39504-C	2/28/2000	1042823.04	755806.83	650.42
SC-39505-C	2/28/2000	1042812.24	755829.90	639.48
SC-39506-C	2/28/2000	1042796.83	755857.36	649.64
SC-39505-S	2/28/2000	1042805.94	755807.58	648.35
SC-39506-S	2/28/2000	1042789.92	755836.20	643.16
SC-39508-C	2/28/2000	1042787.15	755815.81	645.82
SC-39801-U	5/18/2000	1042622.41	755834.26	649.38
SC-39802-U	5/18/2000	1042647.63	755853.16	649.25
SC-39803-U	5/19/2000	1042674.34	755867.42	648.48
SC-39804-U	5/20/2000	1042714.51	755888.89	648.35
SC-39805-U	5/20/2000	1042752.41	755771.09	650.53
SC-39806-U	5/20/2000	1042770.43	755771.97	649.59
SC-39807-U	5/20/2000	1042775.33	755798.94	649.46
SC-39808-U	5/20/2000	1042816.24	755793.22	647.93
SC-39809-U	5/20/2000	1042750.79	755898.83	648.11
SC-39810-U	5/20/2000	1042786.57	755884.10	648.48
SC-39811-U	5/20/2000	1042780.33	755859.57	647.88
SC-39812-U	5/20/2000	1042946.38	756023.62	649.85
SC-39813-U	5/20/2000	1042946.86	756036.54	648.43
SC-39903-U	5/30/2000	1042831.74	756104.80	648.46
SC-39904-U	5/30/2000	1042826.95	756109.10	648.48
SC-39905-U	5/30/2000	1042823.92	756102.25	648.46
SC-39906-U	8/9/2000	1042773.97	755867.69	658.00
SC-39907-U	8/9/2000	1042747.32	755822.97	652.69
SC-39908-U	8/9/2000	1042771.09	755796.71	652.36
SC-39909-U	8/9/2000	1042782.69	755775.14	653.45
SC-39910-U	8/9/2000	1042739.65	755940.70	652.74
SC-39911-U	8/10/2000	1042742.46	755903.90	652.92
SC-39912-U	8/10/2000	1042739.74	755868.25	652.78
SC-39913-U	8/10/2000	1042630.88	755861.62	653.03
SC-39914-U	8/10/2000	1042737.73	755840.16	652.69
SC-39915-U	8/11/2000	1042677.24	755868.98	649.25
SC-39916-U	8/11/2000	1042751.19	755941.41	652.99
SC-39917-U	8/11/2000	1042751.45	755968.18	652.66
SC-39918-U	8/11/2000	1042751.69	755993.14	652.62
SC-39919-U	8/11/2000	1042751.93	756018.38	652.31
SC-39920-U	8/11/2000	1042752.24	756051.08	651.41
SC-39921-U	8/12/2000	1042758.30	756064.66	649.64
SC-39922-U	8/12/2000	1042705.61	755883.28	647.43
SC-39923-U	8/12/2000	1042726.89	755894 91	653.04
SC-39924-U	8/12/2000	1042971.21	756187.72	652.96
SC-39925-U	8/12/2000	1042995.25	756195.07	642.34
SC-39926-U	8/12/2000	1043021.68	756206.03	643.51
SC-39927-U	8/12/2000	1043042.36	756213.27	641.85
SC-39928-U	8/12/2000	1043070.01	756219.13	640.89
SC-39929-U	8/14/2000	1042662.91	755860.82	638.47
SC-39930-U	8/14/2000	1043058.28	756109.42	645.56
SC-39931-U	8/14/2000	1043063.97	756129.99	645.56
SC-39932-U	8/14/2000	1043072.54	756158.93	642.35
SC-39933-U	8/14/2000	1043105.12	756152.07	642.35
SC-39934-U	8/14/2000	1043066.00	756131.08	642.97
SC-39935-U	8/14/2000	1043036.74	756115.37	644.88
SC-39936-U	8/14/2000	1043004.16	756097.89	645.60
SC-39937-U	8/15/2000	1042976.16	756082.86	650.46
SC-39938-U	8/15/2000	1042930.39	756072.72	646.85
SC-39939-U	8/15/2000	1042910.56	756078.65	647.47
SC-39940-U	8/15/2000	1042872.88	756089.92	650.76
SC-39941-U	8/16/2000	1042837.89	756100.38	649.95
SC-39942-U	8/16/2000	1042816.56	756095.94	648.25
SC-39943-U	8/16/2000	1042791.69	756082.51	648.75
SC-39944-U	8/17/2000	1042783.96	756078.33	646.26
SC-39945-U	8/17/2000	1042761.58	756086.24	649.25
SC-39946-U	8/17/2000	1042738.51	756053.77	649.76
SC-41401-U	8/19/2000	1042695.69	756030.64	651.28
SC-41402-U	8/19/2000	1042660.59	756011 69	649.94

WP437 RU15 SAMPLE LOCATION COORDINATES

SC-41403-U	8/19/2000	1042646.83	756004.24	651 64
SC-41404-U	8/19/2000	1042622.61	755991.16	652.49
SC-41405-U	8/19/2000	1042597.70	755977 70	652.32
SC-41406-U	8/19/2000	1042560 58	755957 65	652 56
SC-41407-U	8/19/2000	1042535 46	755944 07	652 45
SC-41408-U	8/20/2000	1042513 42	755932 17	652.80
SC-41409-U	8/20/2000	1042475.37	755911.61	653.27
SC-41410-U	8/20/2000	1042454 03	755894.57	653 56
SC-41411-U	8/21/2000	1042681 73	756023 10	653.39
SC-41412-U	8/21/2000	1042634.86	756038 75	650.34
SC-41413-U	8/21/2000	1042448.94	755904 07	651 46
SC-41414-U	8/21/2000	1042448.95	755926.45	653.11
SC-41415-U	8/23/2000	1042450.62	755570 18	653 11
SC-41416-U	8/23/2000	1042447.41	755576.73	654 44
SC-41417-U	8/23/2000	1042429.81	755609.88	654 84
SC-41418-U	8/23/2000	1042413.96	755640.13	655 08
SC-41419-U	8/23/2000	1042399.15	755668.39	655.74
SC-41420-U	8/25/2000	1042417.39	755693.45	655.55
SC-41421-U	8/25/2000	1042401.56	755694.16	655.41
SC-41422-U	8/25/2000	1042425.88	755705.90	654.00
SC-41423-U	2/20/2001	1042442 25	755892 68	653.45
SC-41424-U	2/20/2001	1042435 50	755859 35	653 70
SC-41425-U	2/20/2001	1042428 75	755826 03	654.10
SC-41426-U	2/22/2001	1042422 00	755792 71	654 40
SC-41427-U	2/22/2001	1042415.25	755759 38	654 75
SC-41428-U	2/23/2001	1042408 50	755726 06	655 10

APPENDIX D
Interoffice Correspondence

MORRISON KNUDSEN CORPORATION
Federal Programs Division

INTER-OFFICE CORRESPONDENCE

DATE: **February 8, 2000**

TO: **Distribution**

FROM: **Linda Broody** LAB

SUBJECT: **REDEFINED BOUNDARIES FOR CU385 AND CU386**

CU385 and CU386 were originally created to confirm the storm water sewer utility and two in-situ areas (ADMX-1 and ADMX-2) in the Administration Area work zone. The utility line will no longer be removed and confirmed per an ALARA Committee decision on November 10, 1999.

The two CUs have been redesigned to include only the in-situ areas and will each contain two sample locations. Confirmation parameters as defined in *Technical Memorandum No. 3840TM-7229-A* will be assigned to the new points.

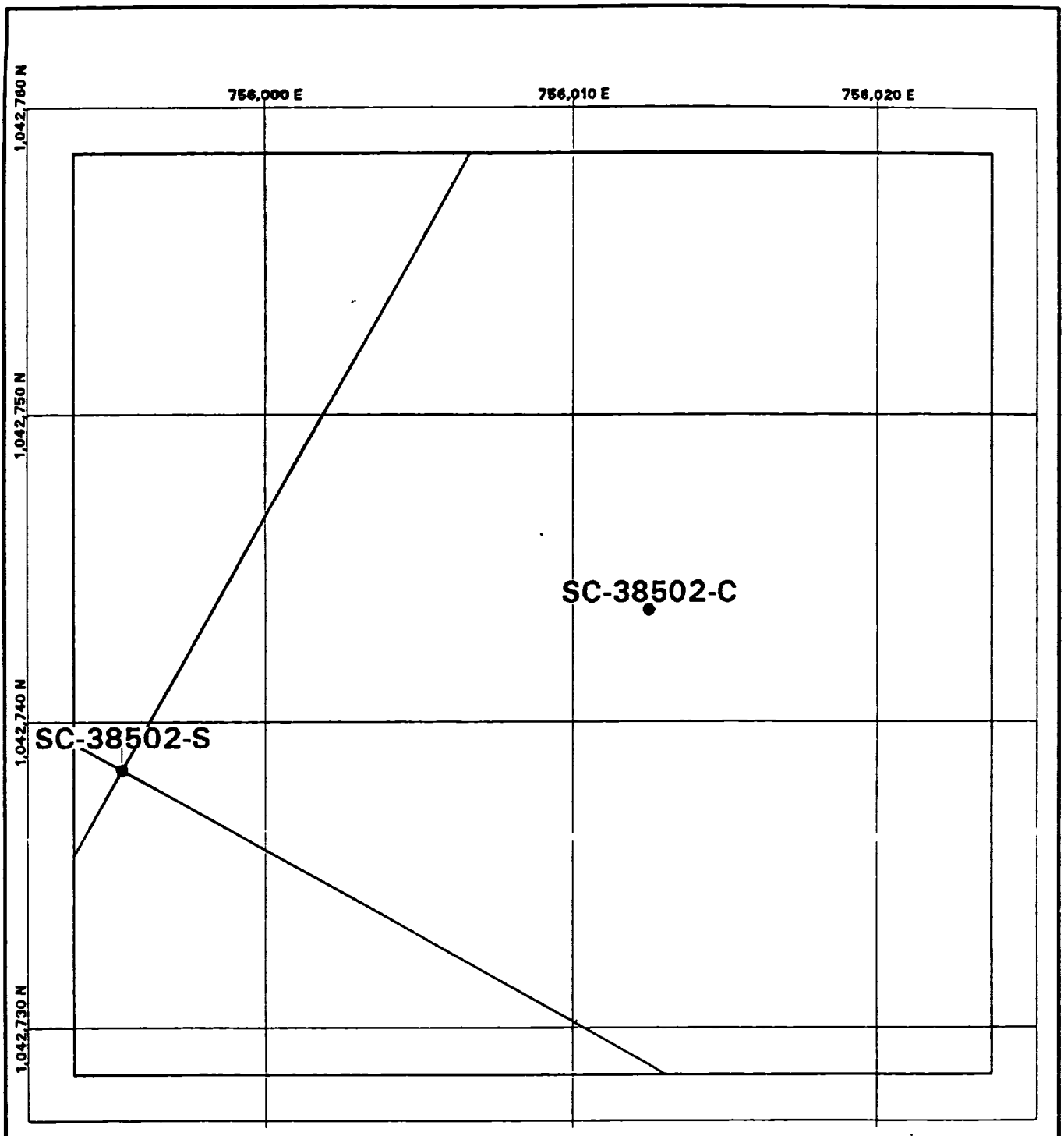
New sample point ID's and locations for CU385 and CU386 are listed below and shown on the attached figures. The attached figures (Figures B-2 and B-3) supercede those in the *Confirmation Sampling Plan Details for the Disposal Cell Facility (WP-437)*, Rev. 0.

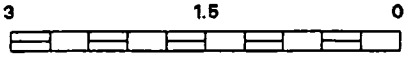
New Sample ID	Easting	Northing	Parameter(s)
SC-38502-C	756012.514	1042743.634	Tl
SC-38502-S	755995.365	1042738.408	Tl
SC-38601-C	756423.963	1042582.569	As
SC-38602-S	756428.197	1042571.286	As

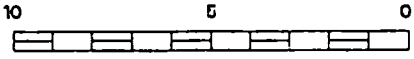
Attachments

cc: Dan Boss
Terry Caldwell
Tim Christopher
Karen Cullinan
Jason Fugate
Karl Hamilton
Melissa Lutz
Nick Twesten
Steve Warren (w/out attachments)
Chris Weston
Confirmation File

LB/lac



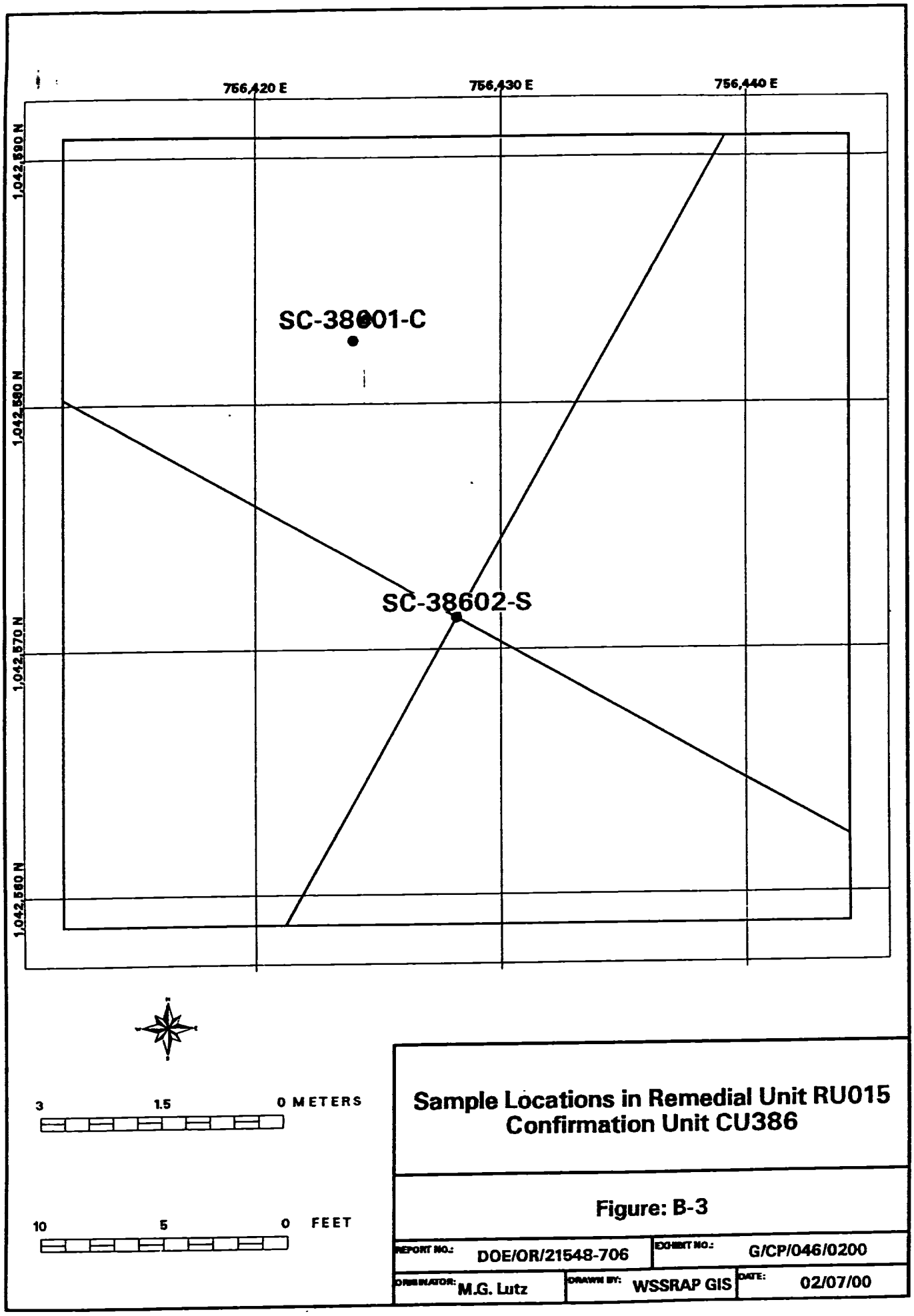




Sample Locations in Remedial Unit RU015
Confirmation Unit CU385

Figure: B-2

REPORT NO.: DOE/OR/21548-706		EXHIBIT NO.: G/CP/045/0200	
ORIGINATOR: M.G. Lutz	DRAWN BY: WSSRAP GIS	DATE: 02/07/00	



Sample Locations in Remedial Unit RU015 Confirmation Unit CU386

Figure: B-3

REPORT NO.: DOE/OR/21548-706		EXHIBIT NO.: G/CP/046/0200	
ORIGINATOR: M.G. Lutz	DRAWN BY: WSSRAP GIS	DATE: 02/07/00	

MORRISON KNUDSEN CORPORATION
Federal Programs Division

INTER-OFFICE CORRESPONDENCE

DATE: **February 29, 2000**

TO: **Distribution**

FROM: **Linda Broody**

SUBJECT: **REDEFINED BOUNDARIES FOR CU382 AND NEWLY DEFINED CU395**

CU382 was originally created to confirm the storm water sewer utility in the Administration Area work zone. The utility line will no longer be removed and confirmed per an ALARA Committee decision on November 10, 1999. Based upon this decision, CU382 boundaries have been redefined and to include only the decontamination pad. COC's are being assigned based on decontamination pad activities.

CU395 encompasses an air shaft located in the Administration Area work zone. The air shaft was identified as a candidate for confirmation after the *Confirmation Sampling Plan Details for the Disposal Cell Facility (WP437)* was issued. The air shaft was a part of building 407, therefore the same COC's associated with building 407 are being assigned to CU395.

The new sample ID's and coordinates are listed below and figures identifying locations are attached. The attached figure (Figure B-1) supercedes the Figure B-1 in the *Confirmation Sampling Plan Details for the Disposal Cell Facility (WP-437)*, Rev. 0. The new CU395 is shown on the attached Figure 2. Please update your plan accordingly.

New Sample ID	Easting	Northing	Parameter(s)
SC-38201-U	756012.514	1042743.634	Ra-226/Ra-228/ Th-230/Th-232/ U-238/As/Cr/Pb/ Tl/PAH/PCB
SC-39502-S	755823.603	1042834.569	Ra-226/Ra-228/ Th-230/Th-232/ U-238/As/Cr/Pb/ Tl/PCB
SC-39503-S	755852.230	1042818.542	Ra-226/Ra-228 Th-230/Th-232/ U-238/As/Cr/Pb/ Tl/PCB

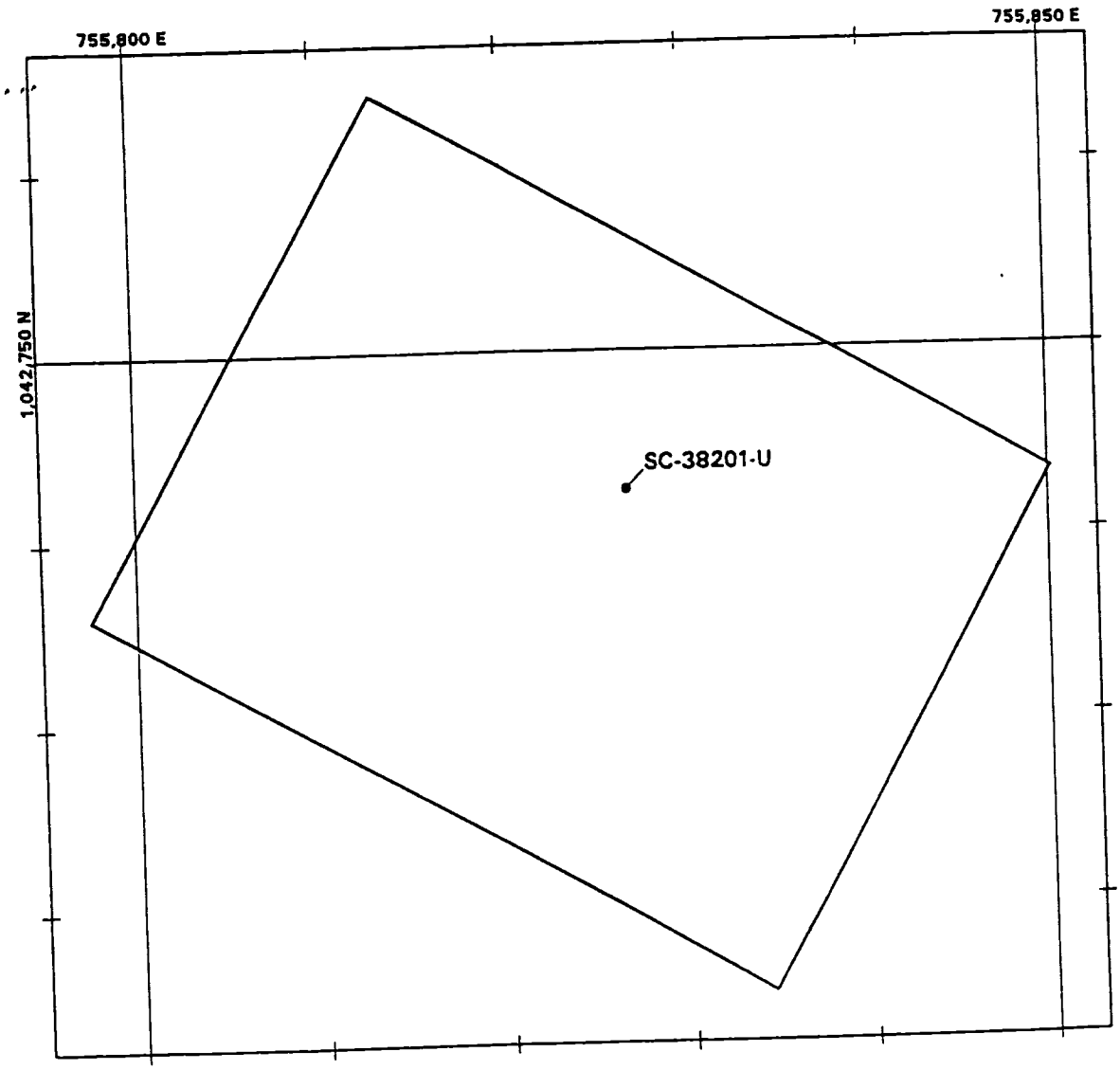
 REDEFINED BOUNDARIES FOR CU382 AND NEWLY DEFINED CU395

New Sample ID	Easting	Northing	Parameter(s)
SC-39504-C	755808.828	1042823.037	Ra-226/Ra-228 Th-230/Th-232/ U-238/As/Cr/Pb/ Tl/PCB
SC-39505-C	755829.903	1042812.242	Ra-226/Ra-228/ Th-230/Th-232 U-238/As/Cr/Pb/ Tl/PCB
SC-39505-S	755807.577	1042805.942	Ra-226/Ra-228/ Th-230/Th-232/ U-238/As/Cr/Pb/ Tl/PCB
SC-39506-C	755857.365	1042796.831	Ra-226/Ra-228/ Th-230/Th-232/ U-238/As/Cr/Pb/ Tl/PCB
SC-39506-S	755836.204	1042789.915	Ra-226/Ra-228/ Th-230/Th-232/ U-238/As/Cr/Pb/ Tl/PCB
SC-39508-C	755815.810	1042787.148	Ra-226/Ra-228/ Th-230/Th-232/ U-238/As/Cr/Pb/ Tl/PCB

Attachments

cc: Dan Boss
Terry Caldwell
Tim Christopher
Karen Cullinan
Jason Fugate
Karl Hamilton
Melissa Lutz
Nick Twesten
Steve Warren (w/out attachments)
Chris Weston
Confirmation File

LB/lac



3 1.5 0 METERS

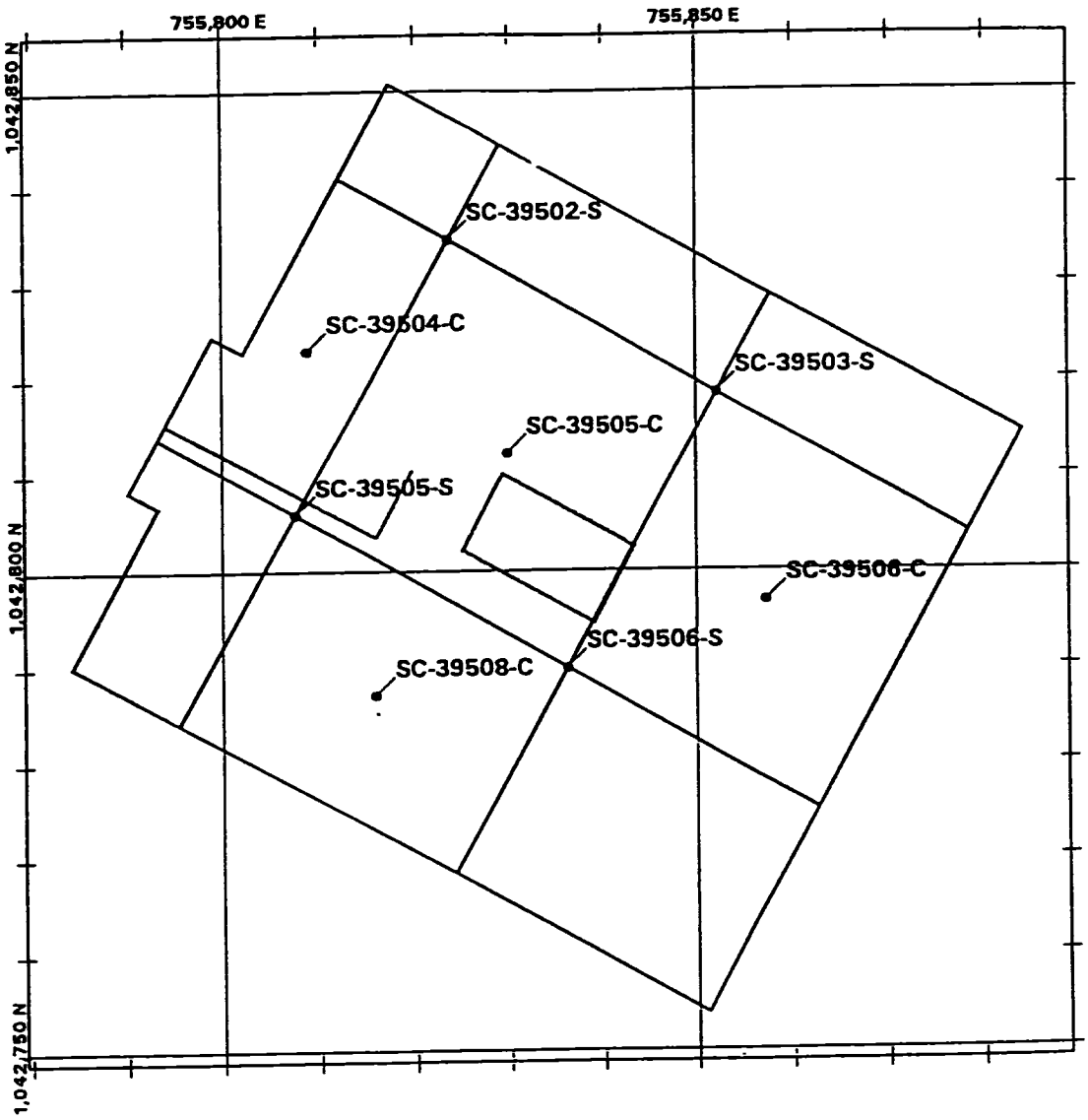
SCALE: 1 inch = 10 feet

10 5 0 FEET

Sample Locations in Remedial Unit RU015
Confirmation Unit CU 382

Figure: B–1

REPORT NO.: DOE/OR/21548-706		EXHIBIT NO.: G/CP/___/0200	
ORIGINATOR: M.G. Lutz	DRAWN BY: WSSRAP GIS	DATE: 02/17/00	



5 2.5 0 METERS

SCALE: 1 inch = 20 feet

20 10 0 FEET

Sample Locations in Remedial Unit RU015 Confirmation Unit CU 395

Figure: 2

REPORT NO.: DOE/OR/21548-___		EXHIBIT NO.: G/CP/___/0200	
ORIGINATOR: M.G. Lutz	DRAWN BY: WSSRAP GIS	DATE: 02/17/00	